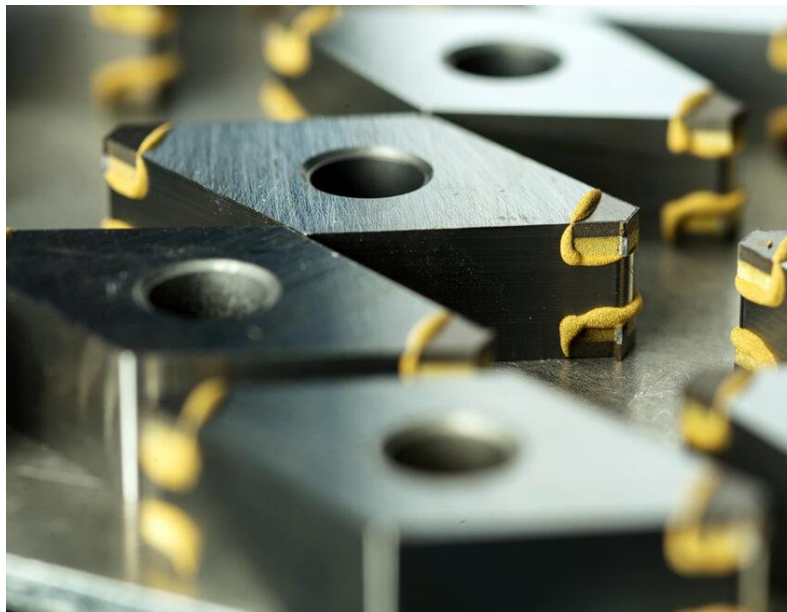


BALIQ® TISINOS – Upgrade in the premier class Machining with CBN cutting materials



FACTS
BSW Zerspanungswerkzeuge GmbH

Standard and special production
of CBN, PCD and CVD-D tools

Since
1992

100
Employees

66793 Saarwellingen,
Germany

www.bsw-gmbh.de

Using cubic boron nitride (CBN) as a cutting material is machining at the highest level: almost as hard as diamond, one use of this synthetic material is to machine high-strength materials. But even if you're at the top, there's always scope to improve performance. German insert specialist BSW aims to set the benchmark in this market -- and thanks to BALIQ® TISINOS, it has done exactly that.

Going for gold

BSW Zerspanungswerkzeuge GmbH, based in Saarwellingen in the Saarland, Germany, generates around half of its sales with CBN products – primarily inserts used in the automotive, e-mobility, aerospace and medical technology industries.

The company has already used various coatings from Oerlikon Balzers, including BALINIT® ALCRONA PRO and BALINIT® LATUMA, with the aim of making wear in inserts visible sooner. This wear is hard to detect due to the uniform gray color of inserts, but it's extremely important as it can lead to lower-quality output during production or to premature disposal of inserts that could still be used.

Applying the BALINIT® ALCRONA PRO Gold or BALINIT® A coatings solved the problem, as their gold color makes wear visible to the naked eye.

Better performance

CBN cutting materials are temperature-resistant up to 1,000°C, making them ideal for dry machining. But the demands are only increasing: for example, one BSW customer wanted a coating on the insert that not only makes wear visible, but also improves performance. "We always work alongside our customers to develop customized solutions which are precisely tailored to their particular application," says Oliver Roski, Head of Technical Sales at BSW.

The know-how of BSW's application experts and in-house manufacturing team made this solution possible. So, the challenge of coating CBN inserts was perfectly suited to BSW's tastes.



“We want to set a benchmark in the market by offering customers the most innovative products at the highest quality level.”

Oliver Roski, Head of Technical Sales
BSW Zerspanungswerkzeuge GmbH

The challenging goal: zero failures

Coating CBN is anything but an easy task: varying stresses on the substrate and the coating can easily lead to stress cracks, and the coating can begin to flake.

BSW found the right development partner in Oerlikon Balzers. “One of our key specifications was process reliability: no failures and perfect quality, because these inserts are very expensive. Their costs exceed those of the coating many times over,” explains Felek Ciftci, Head of Purchasing at BSW.

S3p® Technology

The BSW team and their account manager from Oerlikon Balzers, Metin Cetin, pooled their in-depth expertise to find a solution that met these high requirements. As a result, BALIQ® TISINOS was identified as the ideal coating.

The AlTiSiN coating, based on the S3p® technology developed by Oerlikon Balzers, allows an application temperature of 1,000°C, similar to that of CBN. Other plus points for this technology are its excellent oxidation resistance, its density, its homogeneity, its optimized thickness distribution and its smooth surface.

Perfect and precise fit

BSW particularly appreciates the service provided by Oerlikon Balzers, which included technical consultation as well as a delivery and pick-up service. The company also greatly values the attention to detail paid in delivering the project with customized fixtures and in using specially developed packaging for the BSW insert models.

“Our inserts are always produced for specific customers or orders, so it was very important for us that our coating partner could produce these specific batches,” says Ciftci. This full service is made possible by the processes at the Oerlikon Balzers competence center for S3p® coatings in Bielefeld, which specializes in CBN substrates.

Both partners, BSW and Oerlikon Balzers, are looking to the future with optimism – whether it's enhancing BALIQ® TISINOS or developing tools for specific applications.



Outstanding customer service:
(from left) Oliver Roski, Head of Technical Sales;
Felek Ciftci, Head of Purchasing at BSW;
Metin Cetin from Oerlikon Balzers.

A 2-in-1 solution

The bronze-colored BALIQ® TISINOS coating allows BSW to solve two challenges at the same time: wear is detected at an early stage, and tool service life is increased. “Depending on the application, tools can last up to 50 percent longer,” says Roski.



About Oerlikon Balzers

Oerlikon Balzers is one of the world's leading suppliers of surface technologies that significantly improve the performance and durability of precision components as well as tools for the metal and plastics processing industries.

Extremely thin and exceptionally hard coatings, marketed under the BALINIT and BALIQ product names, reduce friction and wear. The BALDIA portfolio of diamond coatings enables top performance even when machining very challenging materials. The BALITHERM brand opens up a broad range of heat treatment services, whereas BALTONE comprises coatings that are available in a full range of elegant colours, perfectly suited for decorative applications. BALORA gives components effective protection from oxidation and corrosion in environments with extremely high temperatures. BALIMED ThinFilm coatings, with wear-resistant, biocompatible, antimicrobial and chemically inert properties, have been developed especially for medical applications. Under the BALIFOR technology brand the company has introduced technologies which provide tailor-made solutions for the automotive market.

Worldwide, more than 1,300 coating systems are in operation at Oerlikon Balzers' facilities and its customers. Equipment engineering and assembly of Balzers' systems are processed in Liechtenstein and in Bergisch Gladbach (Germany). Oerlikon Balzers operates a dynamically growing network of more than 110 coating centres in 35 countries in Europe, the Americas and Asia. Oerlikon Balzers is – together with Oerlikon Metco and Oerlikon AM – part of the Surface Solutions Division of the Switzerland-based Oerlikon Group (SIX: OERL).

<https://www.oerlikon.com/balzars>