

Press Release

EMO 2015: Oerlikon Balzers presents BALINIT ALTENSA, the PVD coating for ultrafast gear cutting

Balzers, Liechtenstein 5 October 2015 – Extreme cutting speeds, maximised productivity, perceptibly longer service lives – these are the results of real-world tests with the BALINIT ALTENSA AlCrN-based coating developed by Oerlikon Balzers to advance seminal trends in automotive and mechanical engineering applications. At its Stand F17 in Hall 10, the Liechtenstein-based coating technology leader is showcasing another debut during EMO 2015 in Milan: the highly productive INNOVENTA mega, the company's flagship coating system. Further highlights on display from 5 to 10 October include the high-performance BALIQ coatings family and the modular METAPLAS.DOMINO coating systems series.

Machinery costs account for a hefty share of about 30 percent of production expenditure in cutting applications. Thus, it is not surprising that automakers are striving for ever-higher cutting speeds and shorter machining times without trade-offs in production quality. After all, this is the most effective way of reducing production costs. In the quest for greater performance and efficiency, wear-resistant coatings for tools play a genuinely crucial role. Customised solutions for specific applications are the key to success.

To address the ambitious expectations involved in the production of gears, Oerlikon Balzers is leveraging its coating expertise by presenting a high-performance coating at EMO 2015 that has already won acclaim in shop-floor environments: BALINIT ALTENSA is the latest coating in the successful AlCrN family: On a global scale, it has impressed users mainly with respect to its wear resistance, thermal shock stability, and hot hardness in hobbing applications. "BALINIT ALTENSA stands for the highest performance at high cutting speeds and ensures maximum productivity," noted Dr. Wolfgang Kalss, Head of Marketing & Product Management Tools at Oerlikon Balzers in Liechtenstein.

With BALINIT ALTENSA, automakers and suppliers have already reported exceptional results in a wide range of gear-cutting applications. For instance, the cutting speeds (vc) of PM-HSS hobs (90 mm diameter) were easily increased by 30 percent from 200 to 260 m/min with a simultaneous service life extension of 20 percent. In high-speed cutting (vc = 480 m/min) using carbide hobs, tool lives increased by more than 30 percent. Carbide stick blades benefited as well: In the production of bevel gear transmissions and at moderate cutting speeds (vc = 148 m/min), their service lives increased by 70 percent. At higher speeds (vc = approx. 200 m/min) the gain was still 30 percent. In tests, a 140-percent service life extension was achieved with HSS shaper cutters (130 mm diameter). "This defines new performance norms in gear manufacturing while reducing production costs," Dr. Kalss added.

INNOVENTA mega: productive and fast

The new INNOVENTA mega redefines productivity benchmarks as well. Now the largest coating system in the portfolio, it achieves extremely high throughputs with tools such as milling cutters or drills: average batch times of less than five hours are typical. It can accommodate workpieces with heights of one metre or more and a swing diameter of 96 cm. With permissible load weights of up to 3000 kg, it is an ideal platform for

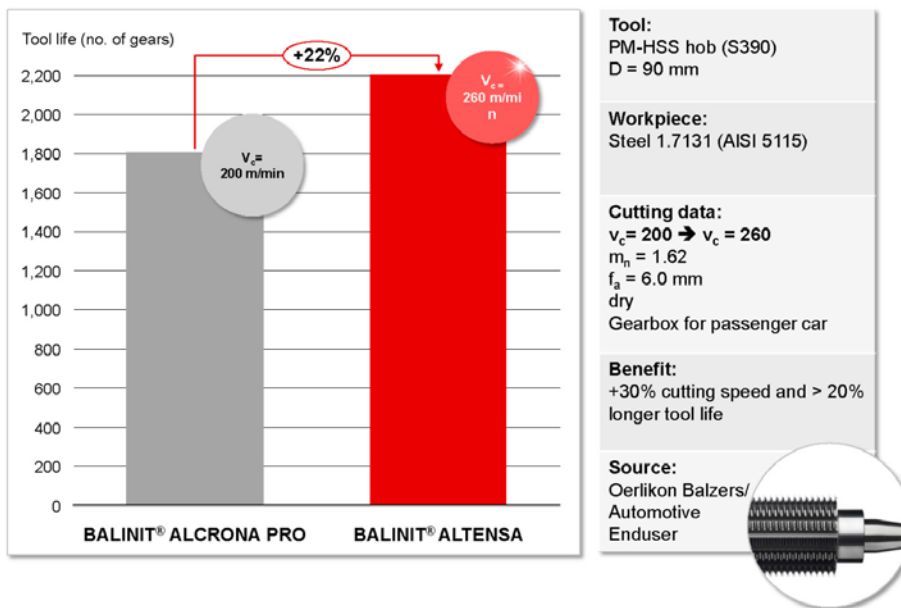
coating bulky moulds or sawblades. The INNOVENTA mega can handle the entire repertoire of BALINIT coatings as well as tailor-made coating designs for a wide range of applications. Rapid commissioning, simple operability, and a high level of reproducibility are further features. On the bottom line, the INNOVENTA mega ideally complements Balzers' more compact INNOVA and INGENIA systems.

From BALIQ to METAPLAS.DOMINO

The focus at EMO is also on the BALIQ portfolio. The innovative coating generation is based on Oerlikon Balzers' proprietary S3p (Scalable Pulsed Power Plasma) technology. It combines the advantages of the sputtering and arc evaporation processes, delivering coatings that excel with extreme wear resistance and unmatched smoothness. The market has already embraced BALIQ products for thread cutting tools, micro-machining, finishing applications and reamers. The coatings family is being continually expanded to cover new applications.

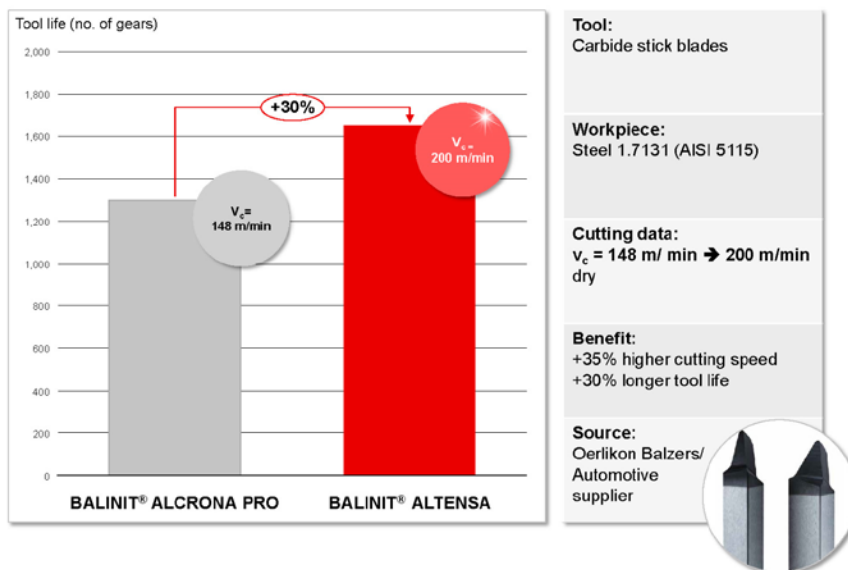
For the first time, the former Metaplas product line is being relaunched under the Oerlikon Balzers brand: METAPLAS.DOMINO is a coating systems series based on a modular concept with four different configurations. The modules can be combined to handle a wide range of user needs such as customised Metaplas PVD coatings or predefined production volumes.

(Picture 1)



20 percent longer service life at 30 percent greater cutting speed – these results were achieved by an auto manufacturer with his PM HSS hobs thanks to BALINIT ALTENSA. / Figure: Oerlikon Balzers

(Picture 2)



An automotive supplier improved the cutting speed for carbide stick blades in the production of bevel gears by a good one third. The service life increased as well by about 30 percent – thanks to BALINIT ALTENSA. / Figure: Oerlikon Balzers

(Picture 3)



BALINIT ALTENSA benefits gear shaping with HSS shaper cutters especially through its extreme resistance to abrasive wear. / Figure: Oerlikon Balzers.

(Picture 4)



In hobbing, BALINIT ALTENZA allows even higher cutting speeds to be realized. / Figure: Oerlikon Balzers.

Picture 5:



INNOVENTA mega can accommodate workpieces with heights of one metre or more and a swing diameter of 96 cm. With permissible load weights of up to 3000 kg, it is an ideal platform for coating bulky moulds or sawblades.

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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. These coatings, developed under the brand names BALINIT and BALIQ, are extremely thin and exceptionally hard and significantly reduce friction and wear. Under the technology brand ePD, the company develops integrated services and solutions for the metallization of plastic parts yielding a chrome look. Oerlikon Balzers has a dynamically evolving network of currently 107 coating centres in 35 countries of Europe, North and South America and Asia. Together with Oerlikon Metco, Oerlikon Balzers is part of the Surface Solutions Segment of the Swiss Oerlikon Group (SIX: OERL).

About Surface Solutions

The Oerlikon Surface Solutions Segment comprises the two brands Oerlikon Balzers and Oerlikon Metco. 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. These coatings are extremely thin, exceptionally hard and significantly reduce friction and wear. Under the technology brand ePD, the company develops integrated services and solutions for the metallization of plastic parts yielding a chrome look. Oerlikon Metco refines surfaces using innovative coatings and systems. Customers benefit from a unique variety of surface technologies, coating solutions, systems, materials, services and specialized processing services as well as components. The innovative solutions improve the performance and increase the efficiency and reliability of components and products. Oerlikon Metco serves customers from the areas of aviation, energy production, automotive technology, oil and gas as well as other specialized industrial markets. The Surface Solutions Segment has a dynamically evolving network of currently more than 145 branches with over 140 coating centres in 36 countries of Europe, North and South America, Asia and Australia with a total of over 6,000 employees. The Surface Solutions Segment is part of the Swiss Oerlikon Group (SIX: OERL).