



THE COATING THAT REDEFINES THE SERVICE LIFE FOR TOOTHING PRODUCTION

The SUBLIME® tool coating yields an especially long service life and distance for the tothing.

Lengthy cutting paths and high cutting speeds are needed when cutting the inner and outer tothing, which places considerable demands on the tools.

Gear hobbing machines therefore require coatings that are specially designed to meet these demands – coatings that reduce wear and enable precise machining right to the very end.

THE CHALLENGE

In today's world, tothing plays a major role in many areas. From wind turbines to MRI, from robot gearing to car gearboxes, different sizes and tothing are required. And it always comes down to friction-locked connections that provide maximum precision and durability.

High temperatures and cutting values arise when producing such internal and external tothing in steel workpieces.

Machining generates high pressure point loads and frictional heat, which places heavy demand on the tools.

In order to offer a solution for this application that enables long service lives and distances with the lowest tolerances, voestalpine eifeler's research and development department has developed a new coating.



THE SOLUTION

SUBLIME®, which is based on AlCrN and AlTiN-based coating materials, is the result of this development work. In voestalpine eifeler Vacotec GmbH's PVD systems, this combination creates an impact-resistant, temperature-resistant coating that provides optimum adhesion.

Thanks to its optimised coating architecture and composition, SUBLIME® achieves first-rate wear resistance, even at the high temperatures that are commonplace in the toothing.



“Our customers tell us time and again that they’d like to see a coating that offers maximum performance be produced for the toothing. With SUBLIME®, we’re now achieving values that represent a real leap forward. Compared to CROSAL®-plus, our previous standard coating in this area, the service distance is 130% longer, which generates a noticeable increase in productivity for our customers.”

A. Hollweck, Product Manager at voestalpine eifeler Coating

TESTED UNDER REAL CONDITIONS

Commercially available gear hobbing machines were equipped with the new SUBLIME® coating for the performance tests.

In the tooth impact procedure, the coating underwent benchmark testing with comparable tool coatings. The result was a consistently optimised service life for the tools that had the new SUBLIME® coating. On average, the service distance was 130% longer compared to the CROSAL®-plus coating by voestalpine eifeler, which had previously been used for the toothing.

Feed path until tool change

(cessation at wear mark width = 0.15 mm)

10.9 m

SUBLIME®

4.7 m

CROSAL®-plus

Information on the test procedure

Procedure: Tooth impact test

Tool: PM-HSS (S390)

Material: sleeves (ZF7B)

Cutting parameter: $v_c = 220$ m/min

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ONE STEP AHEAD.