eifeler

EXXTRAL®-ULTRAFINE

The innovative AlTiN high-performance coating for cutting tools

The aluminium titanium nitride-based EXXTRAL®-ultrafine coating was specially developed for hard, dry and high-speed machining. Through the use of ultrafine technology, EXXTRAL®-ultrafine exhibits what is for arc coatings an exceptionally smooth coating surface. This results in reduced formation of build-up on cutting edges during the cutting and also fosters improved chip removal. The low-defect layer structure of the EXXTRAL®-ultrafine layer, as well as its high hardness and excellent adhesive strength, provides significantly improved durability with dry cutting as compared to the conventional EXXTRAL® arc layer.

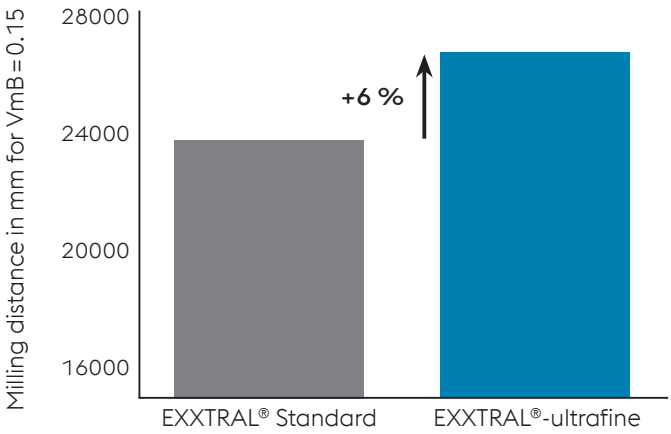

Fig. 1: Maximally achieved milling distance for a wear mark width of 0.15 mm for EXXTRAL®-ultrafine compared to EXXTRAL® for hard milling of Vanadis 10 (62 HRC). Cutting parameters: v_c = 100 m / min, v_f = 1337 mm / min, a_p = 10 mm, a_e = 0.02 mm.

COATING PROPERTIES

Hardness	3,300 ±300 HV
Coating thickness	2 – 3 µm
Max. operating temperature	800 °C / 1.470 °F
Colour	Anthracite
Coating composition	AlTiN-based

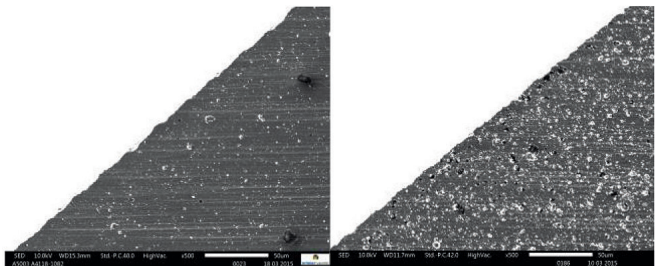

Fig. 2: Scanning electron microscope images of a milling cutter coated with EXXTRAL®-ultrafine (left) and EXXTRAL® (right).

APPLICATIONS

Cutting	Preferred areas of application for the EXXTRAL®-ultrafine layer are thus metal cutting tasks such as milling, drilling and turning, which are performed under high mechanical and thermal stresses up to max. 800 °C.

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voestalpine
ONE STEP AHEAD.