eifeler

# SISTRAL®-ULTRAFINE

## The nanostructured ultrafine coating for high-performance metal cutting

The nanostructured SISTRAL®-ultrafine coating represents a further new development from the ultrafine coating series, specially developed for the high speed cutting (HSC) of very abrasive or hard materials (steel >54 HRC) in dry, high-speed applications. The ultrafine technology allows a considerable reduction of the surface roughness.

The reduction of macroparticle deposition results in a smoother surface layer and low-defect layer structure. This provides a higher wear resistance and improved durability due to friction reduction, especially for hard, dry and high-performance cutting.

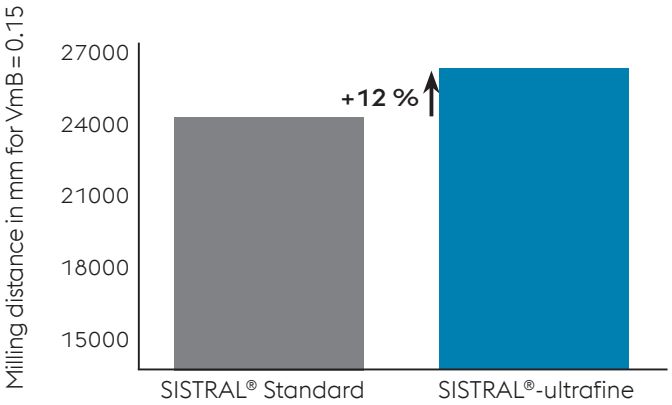


Fig. 1: Maximally achieved milling distance for a wear mark width of 0.15 mm when hard milling of Vanadis 10 (62 HRC). Cutting parameters: $v_c$ =100 m/min, $v_f$ =1,337 mm/min, $a_p$=10 mm, $a_e$=0.02 mm

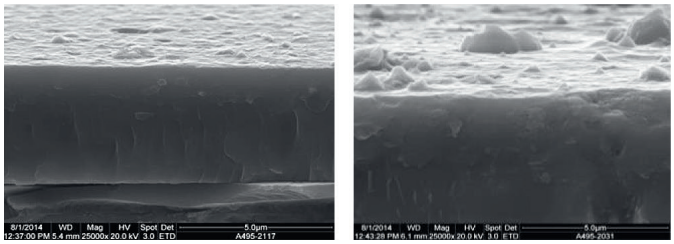

Fig. 2: Scanning electron microscope fracture patterns of SISTRAL®-ultrafine (left) and SISTRAL® coatings (right).

## COATING PROPERTIES

| | |
|---|---|
| **Hardness** | 2,500 ± 300 HV (>3,000 HV possible on request) |
| **Coating thickness** | 2 – 3 µm |
| **Max. operating temperature** | 900°C / 1,650°F |
| **Colour** | Anthracite blue |
| **Coating composition** | AlTiXN-based |

## APPLICATIONS

| | |
|---|---|
| **Cutting** | Hard, dry and high-performance cutting<br>Drilling, turning, sawing |
| **Other** | Other areas of application which demand extremely high resistance towards oxidation and wear as well as high hot hardness. |

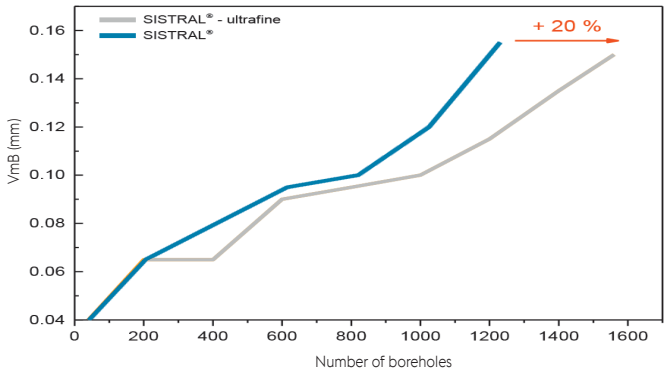


Fig. 3: Wear mark width as a function of the number of boreholes reached in 1.4571.
Drilling parameters: $v_c$ =80 m/min, $v_f$=0.08 mm/rev, $a_p$=20 mm, Avilub 10 %

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ONE STEP AHEAD.