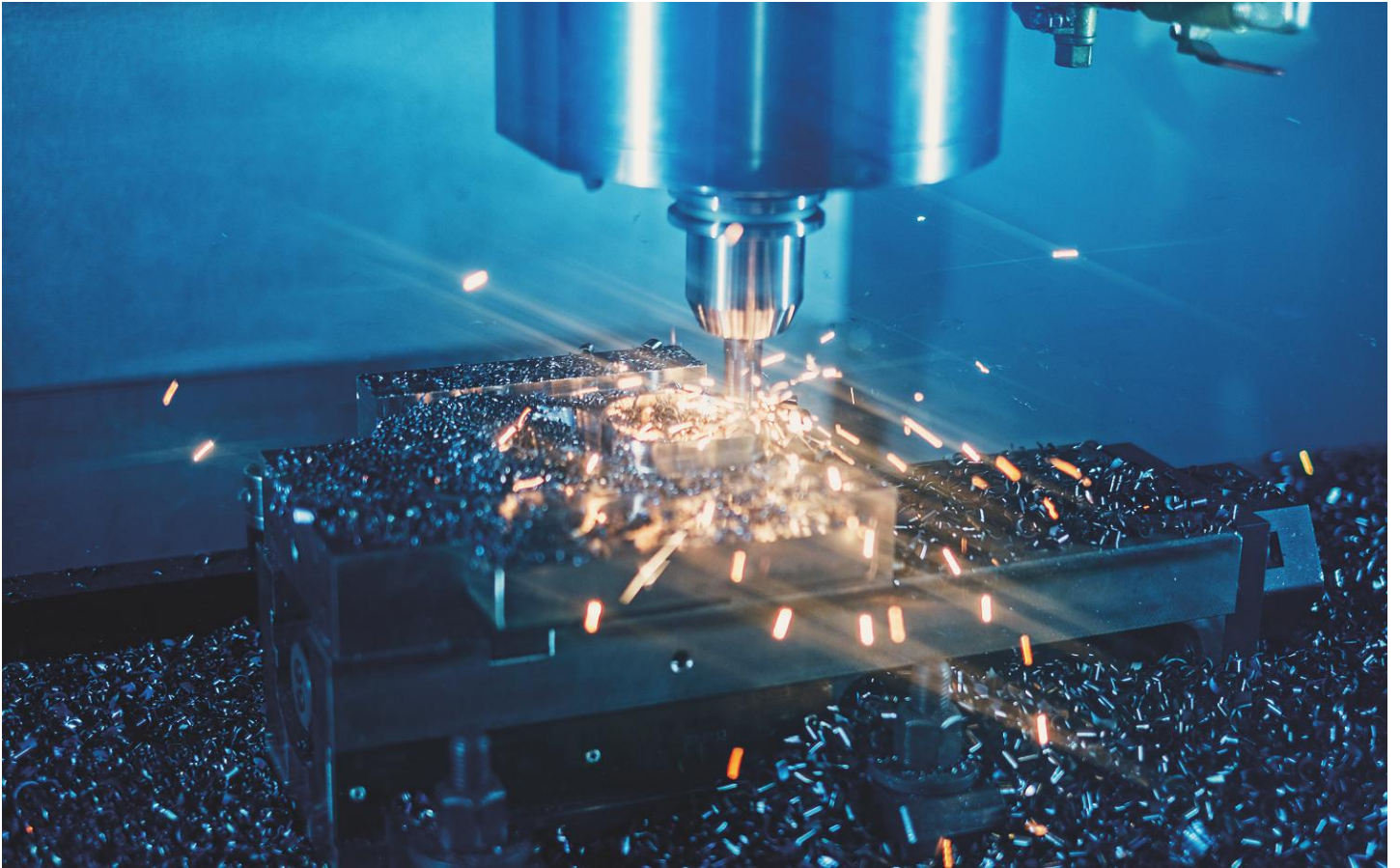


SteelCon® – the game changer



Best performance when machining a wide range of materials

When machining hardened steels beyond 50 HRC, precision tools with SteelCon® coatings achieve top performance. Originally developed for hard machining, it has gradually become apparent that is not all SteelCon® can do: stainless steels, titanium, quenched and tempered steels and much more.

“When we developed SteelCon®, our focus was on hard materials. In particular, we wanted to provide the tool and mold making industry with the best solution for machining injection molds made of hardened steels. And it worked brilliantly – both dry and wet,” says Manfred Weigand, Product Manager Round Tools at CemeCon. The performance has convinced numerous CemeCon customers, and SteelCon® coatings are now widely used.

Encouraged by the positive cutting results, some tool manufacturers have taken a new approach and are also using the SteelCon®-coated tools for machining other materials – the results are astonishing: SteelCon® coatings not only perform excellently in hardened steels but also bring top performance in stainless steels, nickel-based alloys, titanium and even “normal” steels.

Manfred Weigand: “Inconel® 718, 1.4301 (chrome-nickel steel), TiA6V4 (titanium alloy), 16MnCr (case-hardened steel), 42CrMo (quenched and tempered steel), 1.2379 (cold-work steel) – our HiPIMS coating material is indeed a multi-talent! We had suspected it, but the results exceeded our expectations.”

Material: **1.4028: 52HRC**

Tool: **Ball nose end mill,
Ø 6 mm**

$v_c = 207 \text{ m/min}$

$n = 11,000 \text{ U/min}$

$a_p = 0.18 \text{ mm}$

$a_e = 0.18 \text{ mm}$

Cooling: **Emulsion**



Material: **1.2379: 62HRC**

Tool: **Ball nose end mill,
Ø 6 mm**

$v_c = 120$ m/min

$n = 6366$ U/min

$f = 0.13$ mm

$a_p = 0.1$ mm

$a_e = 0.1$ mm

Cooling: **Air**



Material: **1.2379 / 62 HRC**

Tool: **Carbide Endmill, Ø 6 mm**

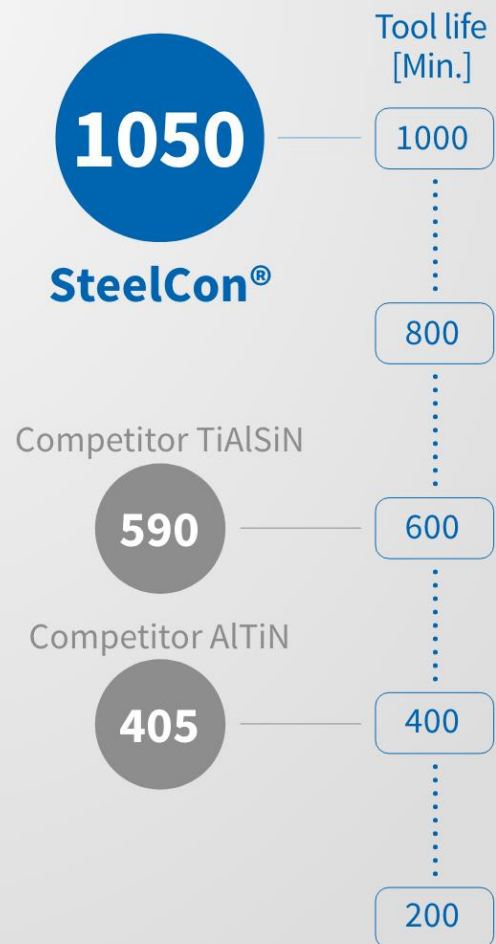
$v_c = 170$ m/min

$f_z = 0.11$ mm

$a_e = 0.05$ mm

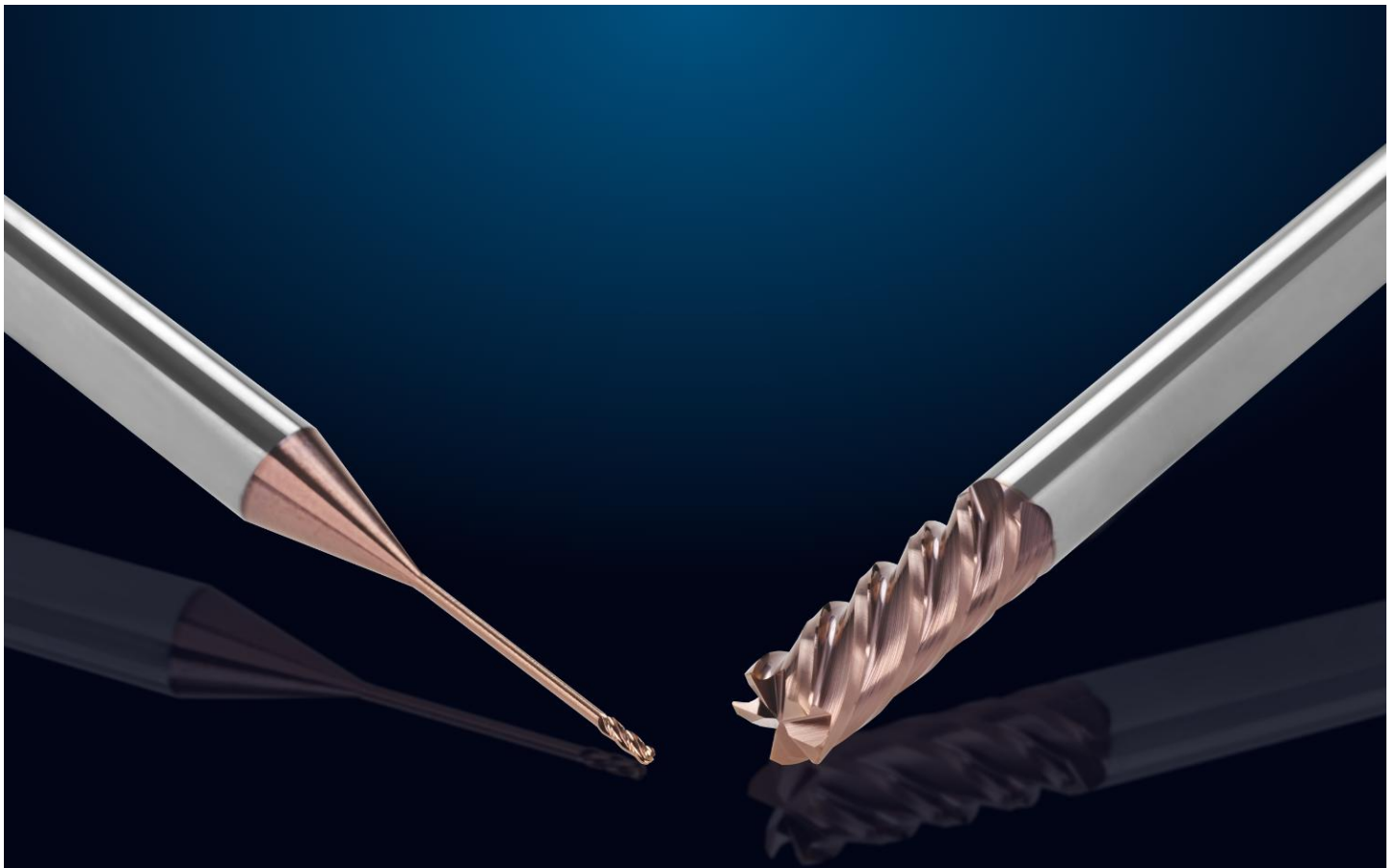
$a_p = 0.05$ mm

Cooling: **Air**



Why does SteelCon® work so well in the different materials?

Due to its composition, the HiPIMS coating material has enormous thermal stability. Furthermore, SteelCon® provides excellent thermal insulation and hardly lets any heat into the tool but dissipates it via the chip. This is particularly advantageous for materials that are themselves very poor heat conductors, such as stainless steel, nickel-based alloys and titanium. Without SteelCon®, the high temperatures that inevitably arise during machining of the hard materials would damage the tool and embrittle the carbide. In addition, SteelCon® is highly wear-resistant, partly due to its high hardness and toughness, and partly thanks to its excellent adhesion. This combination of properties results in significantly longer tool life and excellent machining results.



In order for SteelCon® to achieve its excellent results, the development experts adjust many aspects: In addition to the coating material, these are the coating thickness, tolerances, pretreatment and finishing. In engineering, the process steps are then sensibly combined and adapted to the tool. The result is a customized coating specification that is perfectly matched to the application.

Currently, SteelCon® coatings are primarily used on milling cutters, but the first positive results have also been seen on drills and other cutting tools. And: Soon, the HiPIMS coating material will also be available for cutting inserts.

Thermal stability

Thermal isolation

Hardness and toughness

Excellent adhesion

Our experts are just a phone call away!

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[Round tools](#)

[Thermal stability](#)

Wear resistance

hardmachining

Tool and mould making

Engineering

Custom coatings