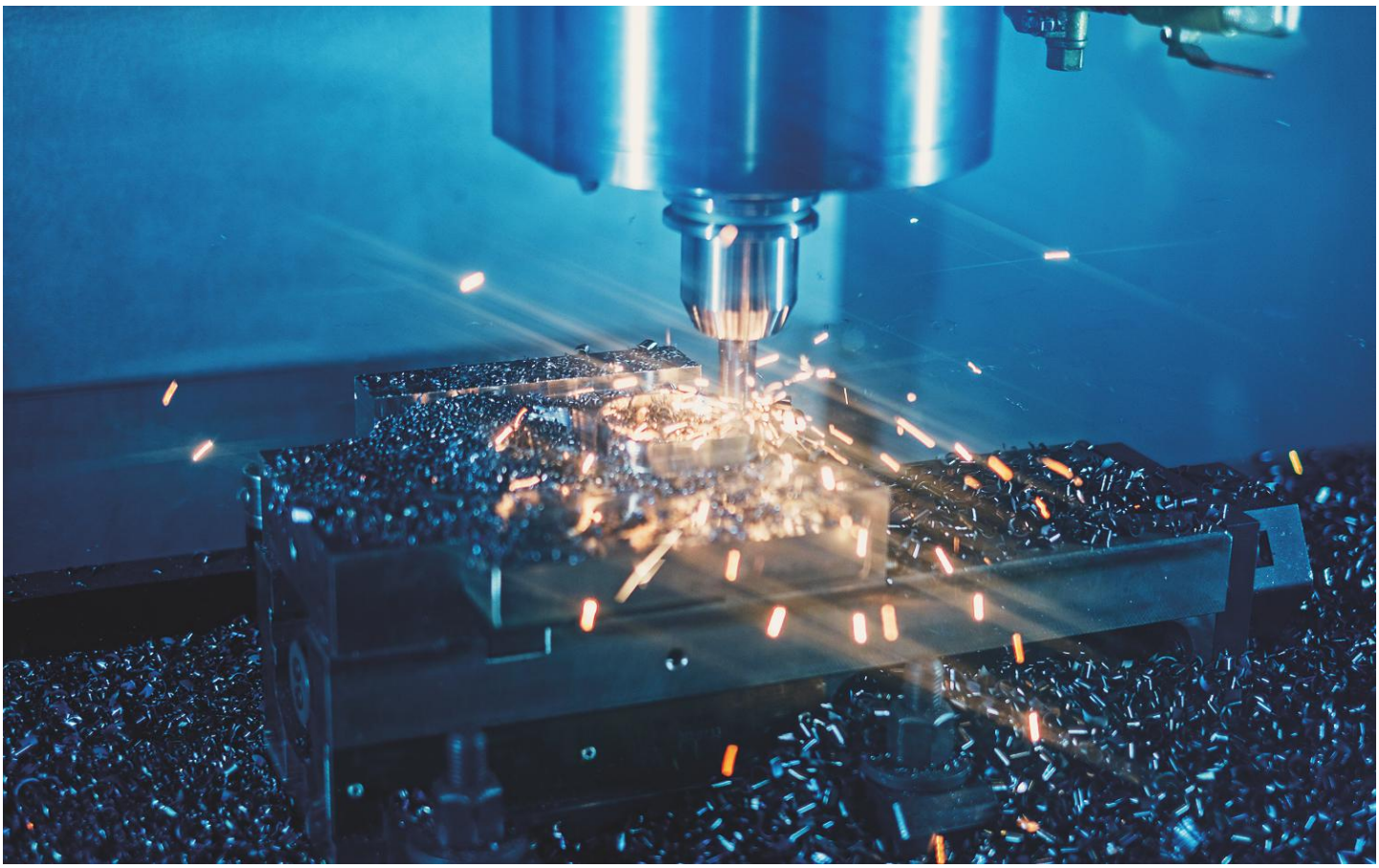
# SteelCon® – THE INNOVATION



## Maximum performance when machining a wide range of materials

Precision tools with SteelCon® coatings achieve outstanding results when machining hardened steels above 50 HRC. Originally designed for hard machining, SteelCon® has proven to be capable of much more: It is equally at home on stainless steels, titanium, heat-treated steels and many other materials.

"When developing SteelCon® , our focus was on machining hard materials. In particular, our aim was to offer tool and mold makers the optimum solution for processing injection molds made of hardened steels - both dry and wet," explains Manfred Weigand, Product Manager at CemeCon. The outstanding performance has convinced numerous CemeCon customers, and SteelCon® coatings are now widely used.

Encouraged by the positive machining results, some tool manufacturers have broken new ground and also used SteelCon®-coated tools for machining other materials - with astonishing results. SteelCon® coatings are not only convincing with hardened steels, but also deliver top performance with stainless steels, nickel-based alloys, titanium and even "normal" steels.

Manfred Weigand emphasizes: "Inconel® 718, 1.4301 (chromium-nickel steel), TiA6V4 (titanium alloy), 16MnCr (case-hardening steel), 42CrMo (heat-treatable steel), 1.2379 (cold work steel) - our HiPIMS coating material really is a multi-talent!

Material: **1.4028: 52HRC**

Tool: **Ball nose end mill, Ø 6 mm**

$v_c$ = **207 m/min**

n = **11,000 U/min**

$a_p$ = **0.18 mm**

$a_e$ = **0.18 mm**

Cooling: **Emulsion**

Material: **1.2379: 62HRC**

Tool: **Ball nose end mill, Ø 6 mm**

$v_c$ = **120 m/min**

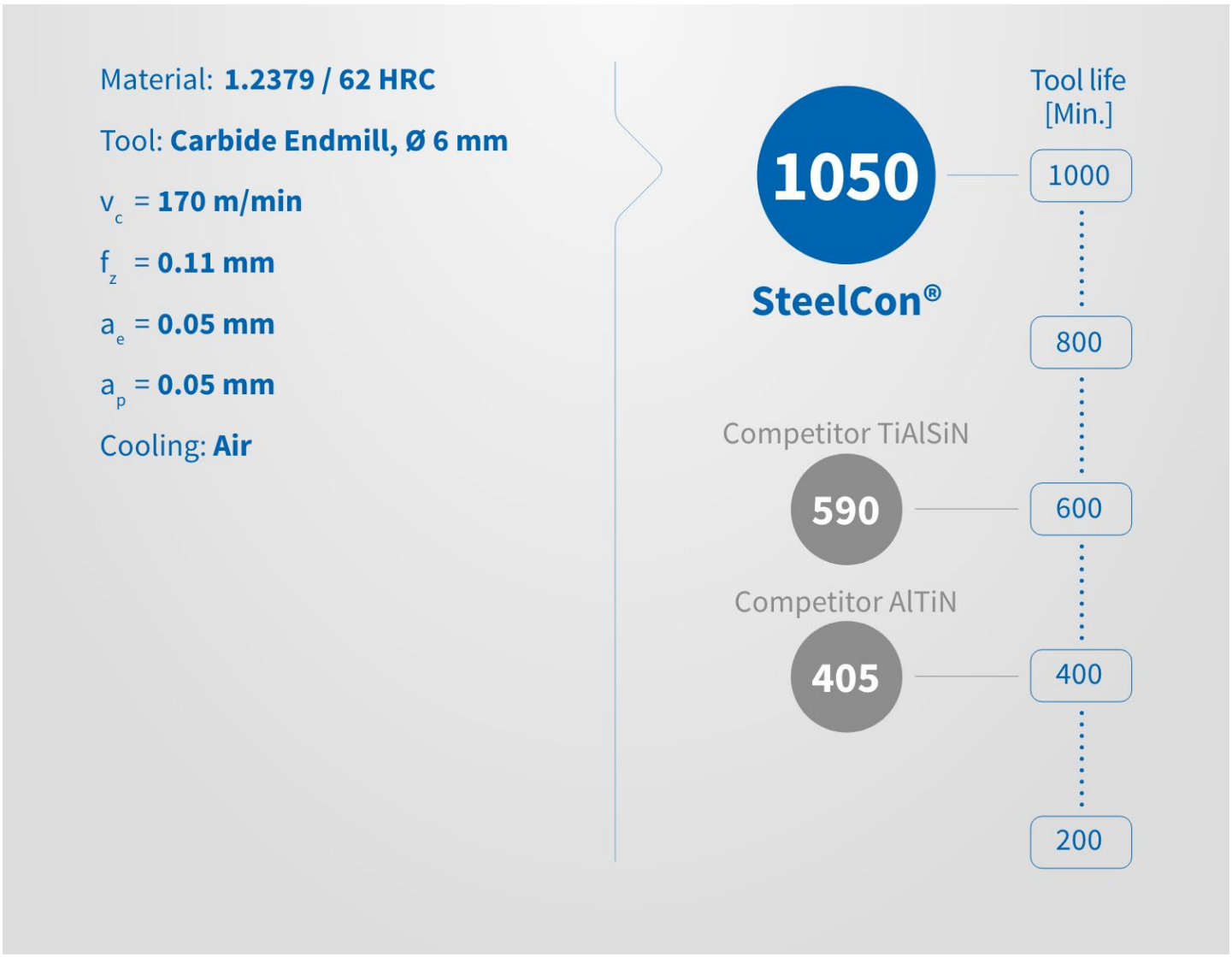
n = **6366 U/min**

f = **0.13 mm**

$a_p$ = **0.1 mm**

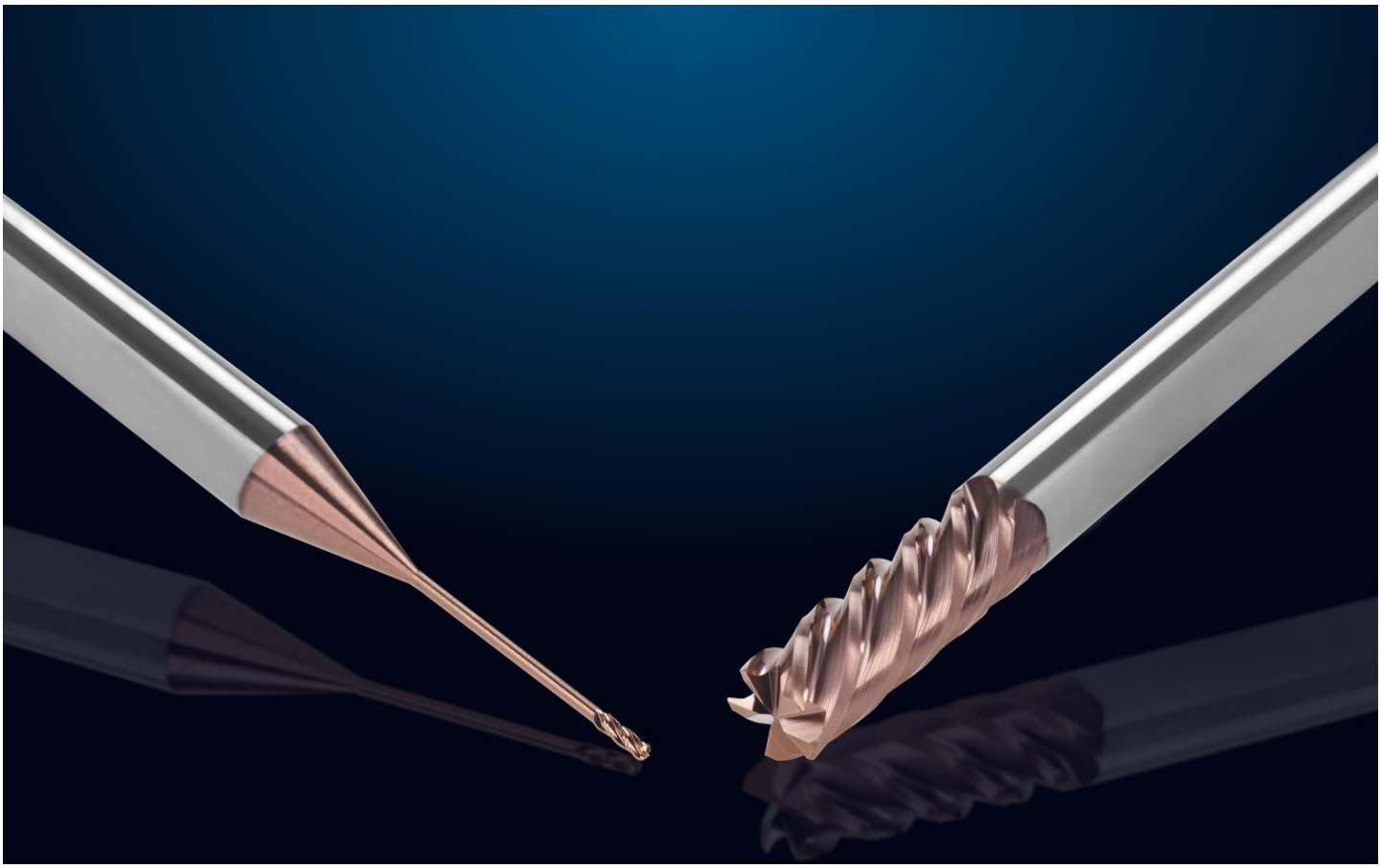
$a_e$ = **0.1 mm**

Cooling: **Air**




## Why does SteelCon® work so effectively with different materials?

The HiPIMS coating material is characterized by its outstanding thermal stability. SteelCon® also provides excellent thermal insulation and efficiently dissipates heat via the chip. This is particularly advantageous for materials with low thermal conductivity, such as stainless steel, nickel-based alloys and titanium. Without SteelCon®, the high temperatures generated when machining hard materials would damage the tool and embrittle the carbide. In addition, SteelCon® is extremely wear-resistant, both due to its high hardness and its excellent adhesion. This combination leads to significantly longer tool life and outstanding machining results.



In order for SteelCon® to achieve its excellent results, the development experts optimize various parameters, including the coating material, coating thickness, tolerances, pre-treatment and finishing. In engineering, these process steps are carefully combined and adapted to the respective tool. The result is an individual coating specification that is perfectly tailored to the application.

SteelCon® coatings are mainly used on drills, milling cutters, indexable inserts, reaming and threading tools. Their outstanding advantages include:

- Thermal stability
- Thermal isolation
- Hardness
- 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