

# The right coatings for all materials

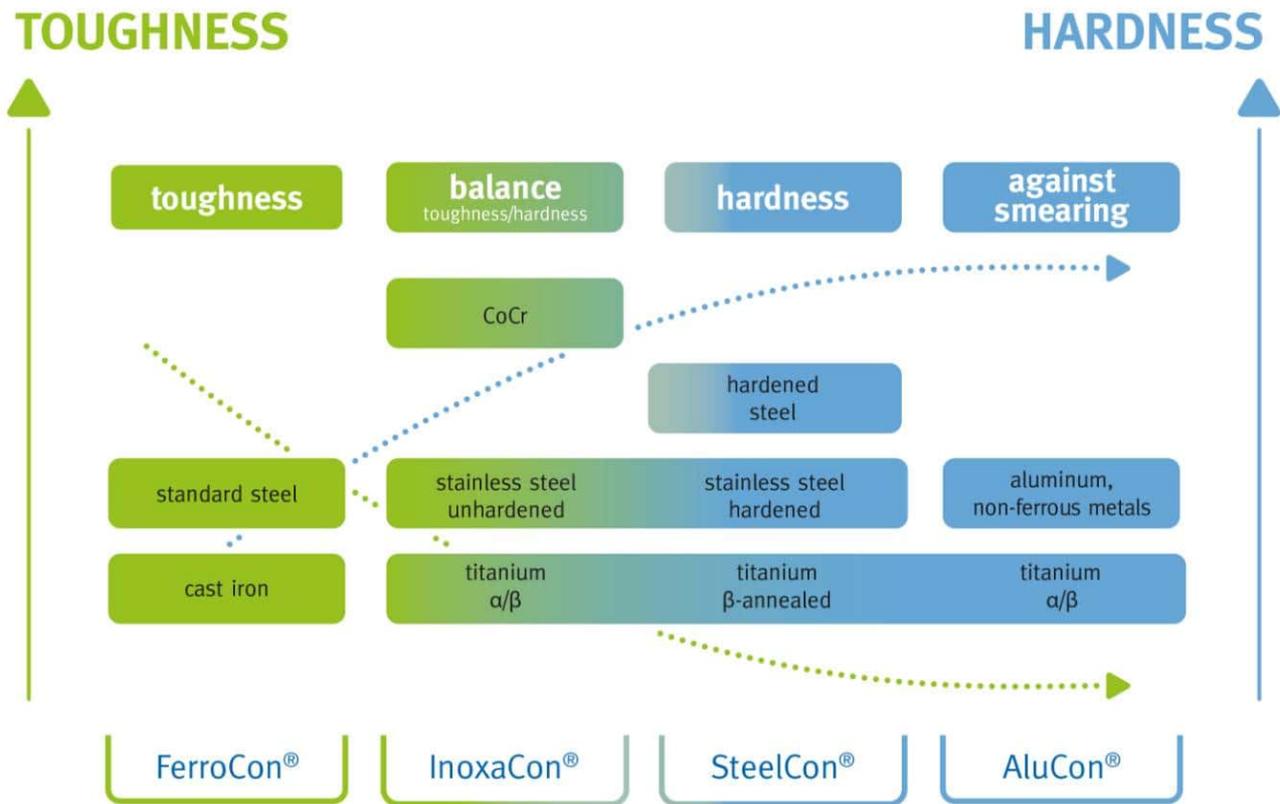


SteelCon® (left) and InoxaCon® (right): Hard to distinguish from the outside, but different on the inside. The layer properties determine the respective area of application

## The solutions for demanding applications: SteelCon® and InoxaCon®

Hardened and stainless steels and titanium – silicon-containing coatings are the answer to materials that are difficult to machine. With SteelCon® and InoxaCon®, CemeCon has the right coating material for every application. Visually, the two are almost identical, while the differences are hidden inside.

“Generally speaking, the tougher the coating material, the more suitable it is for machining soft materials. With its high toughness, our HiPIMS coating material FerroCon® is therefore ideal for machining precisely such steels at high feed rates and cutting speeds. The harder the material, the higher the temperature in the machining process. This is why hard and resistant coatings are required here. Silicon-doped coating materials are the solution,” explains Manfred Weigand, Product Manager at CemeCon. “With our two silicon-doped coating materials InoxaCon® and SteelCon®, we optimally cover the complete range for difficult-to-machine materials thanks to their different coating properties.”



As the name implies, the HiPIMS coating material InoxaCon<sup>®</sup> offers ideal conditions for the reliable machining of stainless steels. It is hard and tough at the same time. Here, these two properties more or less balance each other out. At the same time, it has a low affinity for stainless steels, which have a tendency to build up. This reliably prevents premature wear and ensures process reliability. In addition, InoxaCon<sup>®</sup> is very smooth, which reduces heat in the cutting process and optimizes chip flow. InoxaCon<sup>®</sup> also plays out its advantages when machining chrome-cobalt alloys: The smooth surface of the coating reduces friction. Because of its very good coating properties, InoxaCon<sup>®</sup> is available in two coating thicknesses, 1.5  $\mu\text{m}$  and 3  $\mu\text{m}$ . With this, cutting edges are kept extremely sharp so that the feed rate and cutting speed can be selected for minimum cutting forces – i.e. low pressure. InoxaCon<sup>®</sup> thus prevents work hardening and ensures process stability.

The new coating material SteelCon<sup>®</sup> is extremely hard. Coupled with a nevertheless high toughness and excellent adhesion, it produces very high wear resistance – perfect for machining hardened (stainless) steels beyond 50 HRC. It has a dense layer structure, and thermal stability has been increased. These are top prerequisites for best performance in hard machining. Like InoxaCon<sup>®</sup> and the other HiPIMS coating materials, SteelCon<sup>®</sup> is extremely smooth due to the process. This means that nothing stands in the way of optimum chip and heat removal. The tool can dissipate the heat in the chips, and process stability increases. This combination of properties results in significantly longer tool life and excellent machining results – even in other materials that are difficult to machine. This is demonstrated by numerous applications.

“Visually, there is no difference between InoxaCon<sup>®</sup> and SteelCon<sup>®</sup>. The different structure of our two silicon-doped coating materials provides the right solution for every application. In addition, we turn many other screws for an individual premium coating,” says Manfred Weigand. “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 perfectly matches to the application.”

InoxaCon®

Stainless steel

Titanium

HiPIMS

Hardened steel

Silicon containing coatings