

COATINGS






Custom optimisation with LUKAS coatings

The use of hard coatings like TiN, TiCN, TiAlN and LTE on cutting tools from LUKAS can help:

- increase tool life
- make the tool more efficient and reduce machine load
- improve chip removal

The increase in tool life is mainly the result of the considerably higher surface hardness of the coating in comparison to the base material of the tool itself. The high chemical stability of the coatings also minimises reactions between the cutting edge of the tool and the chip.

The reduction of machine load and the improvement in chip removal are achieved through a reduction in the friction between the free cutting zone of the tool and workpiece on the one hand, and the cutting edge of the tool and the chip removed on the other. The reduction in friction is due to the coating improving the surface finish and largely preventing chemical reactions. Our technicians would be pleased to help you in the selection of the correct coating.

	Special feature	Properties	Coating	Friction on steel µm
<p>AllCoat*</p> 	general purpose	<ul style="list-style-type: none"> ■ general-purpose wear protection when machining ferrous metals (like steel and cast iron) and plastic ■ high toughness ■ food safe ■ biocompatible 	TiN (titanium nitride)	0.65–0.70
<p>HeavyDuty</p> 	suitable for extreme thermal and mechanical shock loads	<ul style="list-style-type: none"> ■ high-performance coating with high hardness and low heat conductivity for use when machining highly abrasive and hard materials (such as steel, non-rusting steels and stainless steel) ■ for milling under extreme conditions ■ for high-performance cutting 	TiAlN (titanium aluminium nitride) see page 17	0.30–0.35
<p>ThermoShock*</p> 	high and sudden thermal shock loads	<ul style="list-style-type: none"> ■ wear-resistant coating, particularly well suited to machining difficult-to-process steel alloys (high and low-alloy steels) ■ for fine deburring 	TiCN (titanium carbon nitride)	0.10–0.20
<p>LowFriction*</p> 	lotus effect	<ul style="list-style-type: none"> ■ special coating with lotus effect for long chip and smearing non-ferrous metals, especially aluminium alloys ■ significantly reduces friction and adhesive wear ■ reduces loading 	LTE (hard, carbon-based coating)	0.10–0.20
<p>LightFlow</p> 	easy chip removal	<ul style="list-style-type: none"> ■ combines high wear resistance with outstanding friction and non-stick properties when used on graphite, aluminium, copper, carbon, wood and titanium alloys ■ perfect surface treatment for significantly reduced wear 	TT®-ta-C (carbon layer made from solid carbon) see page 31	0.05–0.10 (dry)

* upon request