

Tool Coatings

TYPES OF TOOL COATINGS

In many applications performance and tool life can be improved by the addition of coatings to either high speed steel or solid carbide tooling.

Titanium Nitride (TiN)

TiN is a general purpose coating for machining of ferrous based materials. The high hardness and low coefficient of friction of TiN reduce erosion, abrasion and wear. TiN coating also resists corrosion and helps to reduce galling of the cutting edges.

Titanium Carbo-Nitride (TiCN)

The exceptional high hardness and low coefficient of friction of TiCN coating provide excellent wear resistance on metal cutting tools and punches. TiCN coating is perfect for mechanically stressed cutting edges in both continuous and interrupted cutting operations. It has good adhesion, good toughness and resistance to chipping.

Titanium Aluminium Nitride (TiAlN)

The properties of TiAlN coatings make it ideal for high temperature cutting operations in many materials. At very high temperatures, a hard aluminium oxide layer is formed on the tool which has a very low thermal conductivity and high chemical stability. TiAlN insulates the tool from high temperatures, consequently a lot of the heat is rejected into the chip and is directed away from the workarea.

Aluminium Titanium Nitride (AlTiN)

Aluminium titanium nitride has excellent properties for high temperature cutting operations. It is similar to titanium aluminium nitride (TiAlN) in that when it is exposed to high temperature it forms a hard aluminium oxide layer which has low thermal conductivity and high chemical stability. Aluminium titanium nitride excels in high speed and dry machining applications and when machining hardened steel.