

VARIANTIC®

Titanium aluminium carbonitride – The multifunctional multilayer coating

Excellent cutting, forming, stamping and precision cutting results. The temperature resistant TiAlN underlayer, in conjunction with the hard and low-friction TiCN top layer, delivers a combination which presents clear advantages in numerous applications. In the area of cold forming in particular, excellent results are achieved when Duplex VARIANTIC is used.

APPLICATIONS

Cutting	Reaming and milling of steels
Punching and forming	General applications in the area of sheet steel and cold forging; Duplex VARIANTIC recommended for high compressive stress in the tool



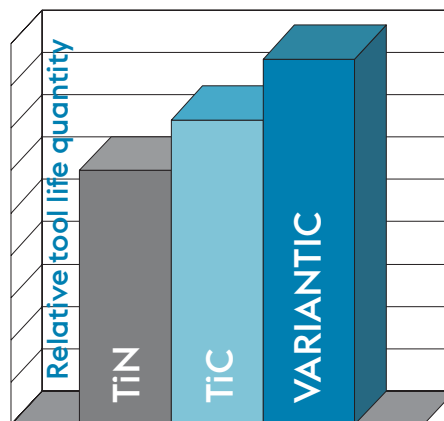
COATING PROPERTIES

Hardness	3,500 ± 500 HV
Max. application temperature	800 °C / 1,470 °F
Coefficient of friction against steel	0.2
Coating thicknesses	2 - 4 µm
Colour	antique pink

PRODUCT FEATURES

- » Can be deposited on HSS and hard metal
- » Substantial friction reduction
- » Multilayer structure
- » High wear resistance
- » Tough, hard, and temperature resistant up to 800 °C

TOOL LIFE QUANTITIES COMPARISON



Forming of hot rolled strip DD-13



Workpiece:
Hot rolled strip DD-13, 3 mm,
280 -350 N/mm²

Tool:
PM steel, 62-63 HRC,
Ø 170 mm x 150 mm