

TT®-ta-C

Superhard dimensions for machining

TT®-ta-C coatings are a subgroup of amorphous diamond-like carbon coatings (DLC – Diamond-Like Carbon).

TT®-ta-C is a tetrahedral, amorphous hydrogen free carbon coatings which is produced with Laser-Arc-Technology (PVD process) of solid carbon (graphite).

For an optimal adhesion of the tools to be coated, the basic material should have a surface hardness of ≥ 58 HRC.

Attributes of the TT®-ta-C coatings

Coating structure	Hydrogen free, tetrahedral amorphous carbon, sp ³ share of 85%, adjustable
PVD coating	Ta-C
Coating composition	Mono layer
Micro hardness	4.500 – 7.000 HV, adjustable
Thickness of coating*	Up to 1.5 μ m
Max. operational temp.	400 – 500°C in air, <800°C in vacuum
Friction against steel	0,07 (dry)
E-module	300 – 450 GPa, adjustable
Abrasive wear efficiency	1*10 ⁻⁸ mm ³ /Nm (dry on steel)
Colour of coating	Rainbow to black-grey

* thickness of coating with respective tolerance of coating thickness depends on the application

Applications

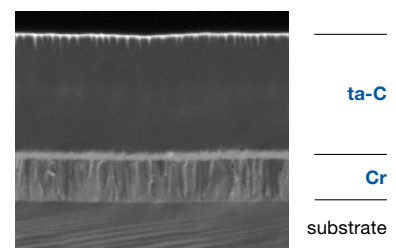
Machining of graphite, Aluminium, copper, carbon fibers, wood and Ti-alloys

Unique attributes of the process technology at H-O-T

Filtered ta-C variant with Laser-Arc

- Homogeneous composition of the coating
- Smoother surface
- Better downtimes
- Higher productivity

The composition of a TT®-ta-C coating



HEAT TREATMENT

Vacuum hardening
Inert gas hardening
Sub-zero cooling
Plasma nitriding
Gas nitriding
Salt bath nitrocarburizing
Annealing
Oxidizing

TRIBOLOGY

PVD coatings
PACVD coatings

COATING TECHNOLOGY

PVD coatings
PACVD coatings
UniTwin® combination systems
hi-Fusion coatings

PLANT ENGINEERING

TT 300
TT 1000
TT 1500
Concept plants

SERVICE

Laboratory
Polishing
Consultation
Service life test
Pick-up service

H-O-T

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