

# SNSTC NDC DIAMOND COATING TOOL

Can be used on dry-cutting, as well as as for ultrasonic cutting for graphite, fiber materials, ceramic and non-ferrous metal



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# NDC (Neo Dia Coating) Diamond Coatings on Carbide Tools

NDC coatings on carbide tools are the best choice for machine graphite, fibrous materials, ceramics and non-ferrous materials, and can be applied to all kind of processing occasions including dry-cutting and ultrasonic cutting.

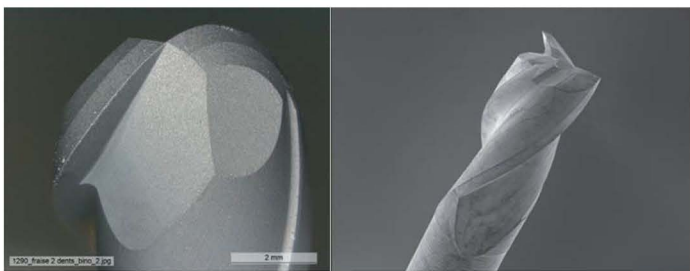
SNSTC delivers high quality diamond coated tools to customers with a targeted multi-type, multistructure diamond coatings and a unique special pretreatment process.

NDC coatings grown on carbide tools consist of a polycrystalline diamond coating whose microstructure can be adapted depending on targeted applications.

## Specifications of Coated Tools

Typical data of tools coated with NDC coatings:

Type	Drill, Mill, Reamer
Diameter	From 0.3 to 20mm
Overall tool length	Max 100mm (longer possible in appropriate fixtures)
Coated length of the tool	Max 30mm
Typical carbide grade	6% to 10% Co content



## NDC Coatings for Carbide Tools

SNSTC has developed a coating solution for improving lifetime of cutting tools. Thanks to its know how in Hot Filament CVD deposition and interface engineering, SNSTC offers its NDC coatings for carbide tools:

NDC\_Mrico - pure sp<sup>3</sup> CVD diamond for machining abrasive materials such as graphite or ceramics.

NDC\_Nano - smooth nanocrystalline diamond for machining CFRP stacks, Al - Si alloys.

In SNSTC's factories, high quality CVD diamond coatings are deposited and grow on large-scale HFCVD reactors and to ensure customer's satisfaction with the highest quality diamond coatings, SNSTC has implemented a strong quality assurance policy.

## NDC Coating Data

Typical data of tools coated with NDC coatings:

Hardness	up to 10000 HV
Thickness	from 0.003 to 0.01mm (typically 0.006mm)
Microstructure	microcrystalline, nanocrystalline, customized
Temperature of use	< 600°C in air

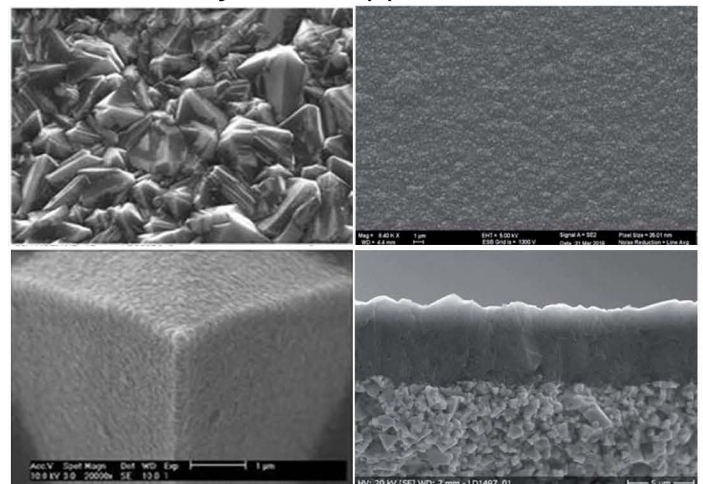
## NDC Performance vs Competition

Tool: 8mm drill with CVD diamond coating

Machined material: CFRP stack (airplane part)

Coating type	Run-out radial(mm)	Number of holes
No coating(reference)	0.003	80
CVD diamond(manuf. A)	0.6	250
CVD diamond(manuf. B)	0.1	325
CVD diamond(manuf. C)	0.05	600
NDC_NANO	0.02	550

NDC coating exhibits the same lifetime than the best supplier on the market but with a significantly lower ROR, and the process stability is better than any other supplier.



\*数据来源与合作机构, SNSTC保留一切权力。