



TuffTek® — Cubic Boron Nitride Based Composite Coatings

TuffTek® is an extremely wear-resistant cubic boron nitride (cBN) coating. It offers exceptionally long tool life and the ability to work at high metal removal rates. Unlike polycrystalline cubic boron nitride (PCBN) tools, TuffTek® coatings are available with chip breaker geometries. The TuffTek® coating is suitable for harsh machining applications such as turning of hardened steels (>45 HRC) or pre-hardened steels (28~32 HRC).



Recommended Applications

Machining operations

Semi-finish and finish turning, wet or dry

Workpiece materials

Hardened steels such as AISI 4340 alloy steel and other steels with Rockwell C hardness in the range of 28~53

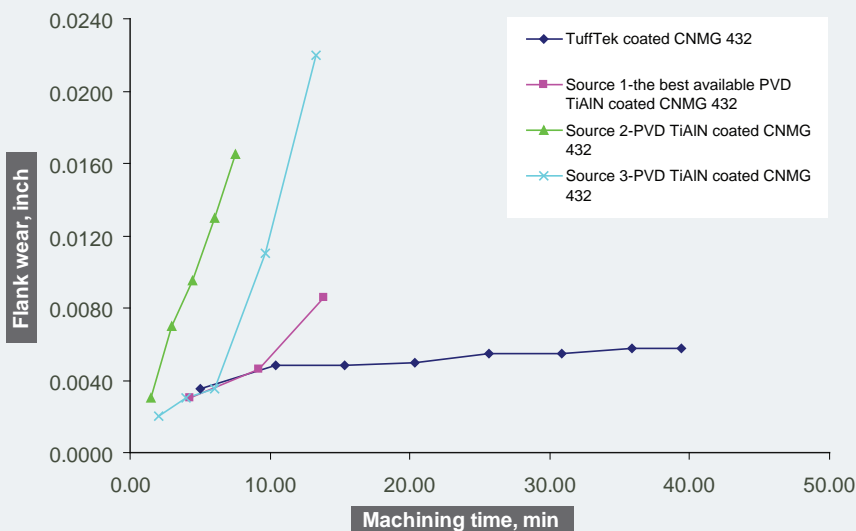
Machining parameters

Hardened steels have been machined at the following condition:

- Cutting speed up to 150 m/min (492 ft/min)
- Feed up to 0.15mm/rev (0.006 inch/rev)
- Depth of cut up to 0.25mm (0.01inch)

Performance

- Turning AISI 4340 hardened steel shaft (50~52 HRC, straight cut).
TuffTek® outperformed TiAlN coated inserts by more than 300%.



Machining conditions:

V=150m/min,
F=0.15mm/rev,
Depth of cut=0.25mm,
with cutting fluid



2. Turning of a mandrel (A2 steel, 58 HRC). TuffTek® outperformed TiAIN coated inserts by more than 300%

Semi-finishing with TiAIN coated insert at $V=300$ ft/min; $F=0.0043$ inch/rev; Depth of cut= 0.014 inch, wet.



Results:

TuffTek® cut 9 shafts while still retaining good cutting edges; TiAIN cut typically 3 shafts. In addition, TuffTek® provided 50% reduction in cycle time.

FOR MORE INFORMATION, PLEASE CONTACT:

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