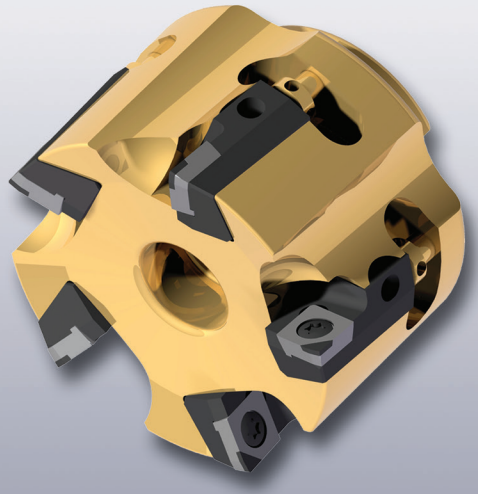
TVcarb

Advanced Cutting Materials

Made in Germany

Extreme Performance with "TFC"

- ✓First choice for composites
- ✓Extreme hardness
- ✓Dramatically improved tool life
- ✓Superior surface finish
- ✓Reduced cutting pressure

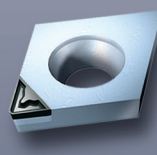


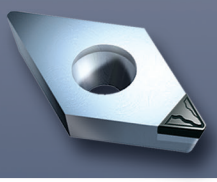
TFC Features & Benefits

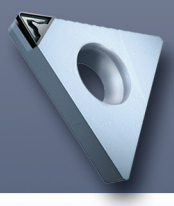
- **Harder, more wear resistant**
  2 to 10x life of PCD
- **Pure diamond (no binder)**
  no edge erosion or chemical interaction
- **Highest thermal conductivity**
  lowest cutting temperatures
- **Sharpest cutting edge**
  reduced cutting forces
  smoother more consistent finish

Application Materials

- Silicon aluminum alloys
- Metal matrix composites
- Carbon fiber reinforced plastic
- Platinum and gold
- High temperature plastics
- Glass reinforced epoxy







Application: TCP90 Milling Cutter

Milling the face of a cast aluminum oil pan.

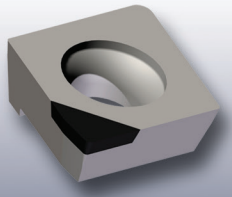
Material is A380 Aluminum consisting of 9% silicon.

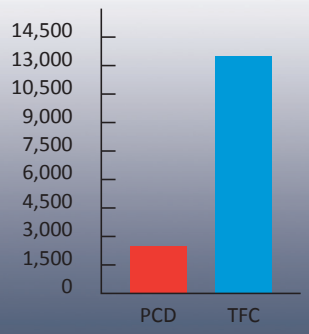
Cutting Data:

4.00" diameter cutter (Z=10)
8000 RPM (through tool coolant)
213 IPM feedrate
0.040 - 0.080" D.O.C.
32 RMS

Part life:

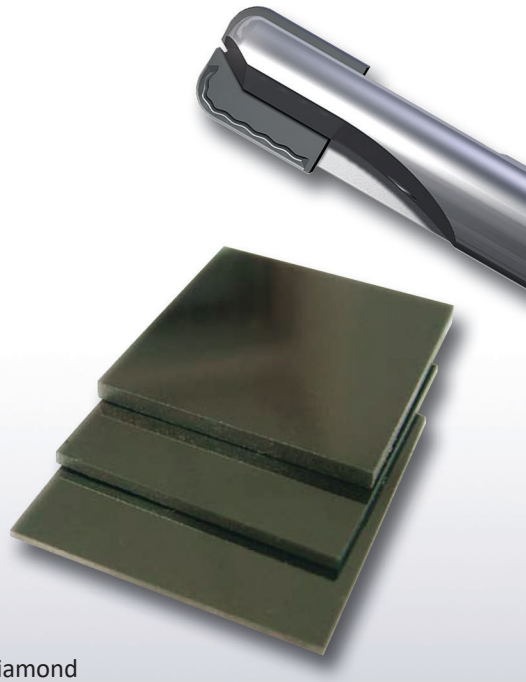
PCD= 2,500 pieces
TFC= 13,500 pieces



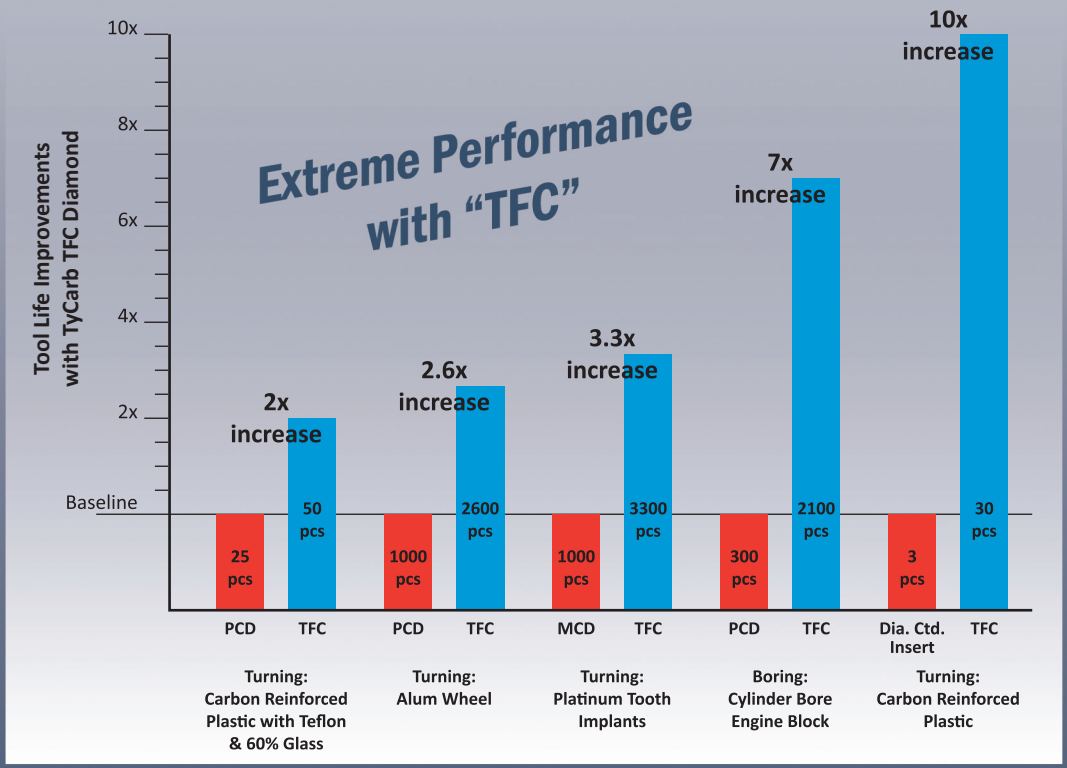


540% Increase in tool life using TFC!

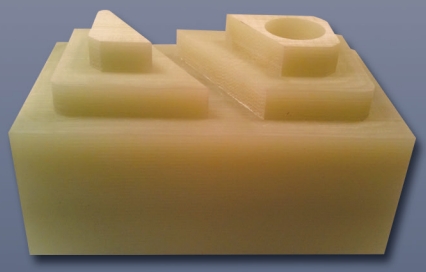
Extreme Performance with "TFC"



"TFC" Thick Film CVD diamond. This outstanding program of cutting tools from TyCarb has such extreme consistent hardness that its wear properties are anywhere from 2 to 10x that of PCD. This diamond is grown in a chemical vapour deposition reactor in thicknesses of 0.5 mm-1.8mm which allows for a wide variety of milling tools and insert geometries. This pure diamond has no binders which allows extreme cutting edge sharpness giving you excellent surface finishes with virtually no cutting pressure. The absence of binders at the cutting edge allows for excellent thermal conductivity which reduces heat produced at the cutting zone. The extreme sharpness and the pure diamond cutting edge of the TyCarb "TFC" tools avoids chemical interactions with materials or cutting fluids which eliminates failures due to cutting edge erosion. This pure diamond maintains a sharper cutting edge far longer than that of the standard polycrystalline diamond tools. With this advancement in technology in cutting material, the technology to prepare the cutting tools has also evolved drastically. All of the "TFC" tips produced at TyCarb are adhered using a high vacuum brazing process that ensures excellent quality. Due to the extreme hardness, the cutting edge cannot be ground or eroded thus the manufacturer has invested in High Tech lasers which not only prepare the cutting edges to the highest quality but also allows the 3D cutting edge geometries in various formations prepared in the same quality.



CFK
Carbon Fiber



GFK
EGS 619:
80% Glass & 20% Epoxy Resin

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Available From:

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