



# T3030

## **H.O.T. Product Update Features and Benefits**

# Features

- “**Double Bridge Technology**” is a coating with superior adhesion strength
- Specially developed high toughness substrate material
- Grade T3030 can be run with coolant
- T3030 grade can run at high cutting speeds

# Benefits

- Coating helps with dramatic improvement in wear resistance
- New substrate protects against thermal cracking
- Using coolant improves wear resistance and control chip flow
- Higher speed reduces cycle times

# Strengths

- “**Double Bridge Technology**” provides T3030 high wear resistance with a stable tool life and exhibits better wear resistance than competitive CVD coated grades.
- High strength substrate allows for rough cutting along with the ability to resist thermal cracking.
- High resistance to thermal cracking also allows T3030 to be run wet. Competitor grade shows high level of thermal cracking during wet cutting.

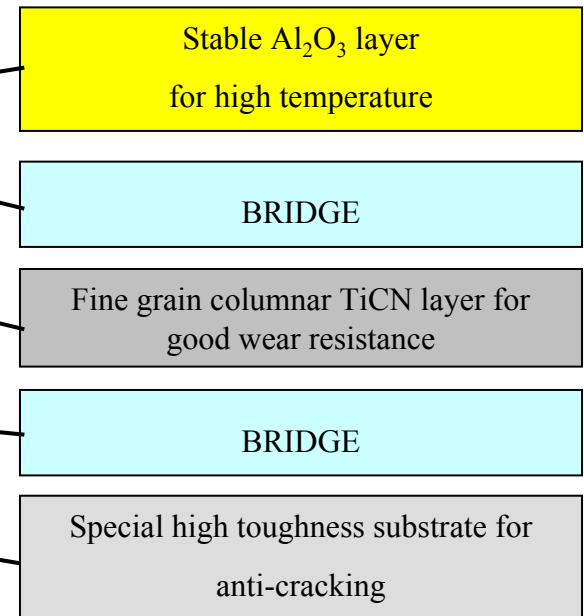
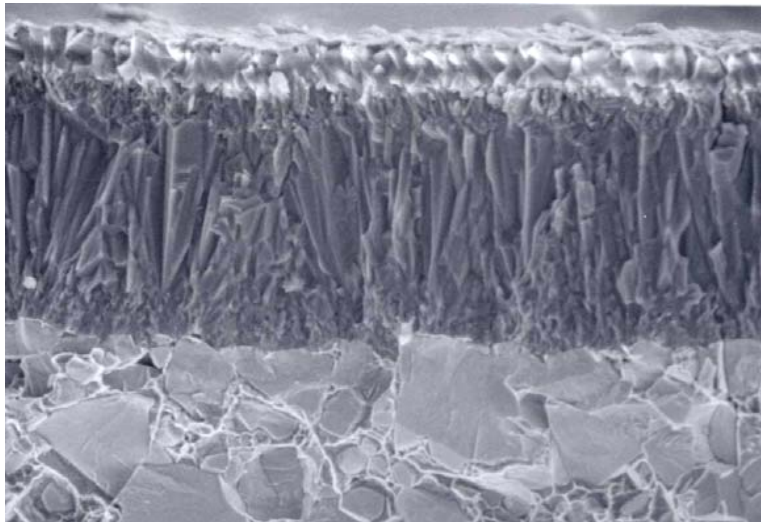
## “Double Bridge Technology”

Concentrates on adhesion strength. There exists two “bridges”:

1. Between the substrate and the coating
2. Between the coating layers.

These bridges provide a high level of coating adhesion strength, therefore the coating will last longer providing extended wear resistance.

### T3030 Double Bridge Coating



# What makes T3030 great?

## \* Coating

T3030 grade has a CVD coating layer. Generally, CVD coating layer is made of ceramics so boundary face between coating/coating or coating/substrate is weak.

With the T3030 grade, the binding power between the “special bridge” coating layer and Al<sub>2</sub>O<sub>3</sub> coating layer, and between the substrate and the “special bridge” coating layer are strengthened by Tungaloy’s unique technology called “Bridge-over technology.”

Now we have the higher adhesion strength and wear resistance with these technologies.

# What makes T3030 great?

## \*Substrate

The substrate of T3030 grade has two superior features:

- 1) Higher impact resistance in steel milling through optimization of the contained amount of cobalt as the bonding material
- 2) Higher thermal shock resistance with optimization of the composition MC (Multi Carbide, TiC, TaC, NbC).

When the contained amount of cobalt increases, impact resistance will be higher and higher. However, the wear resistance will be worse.

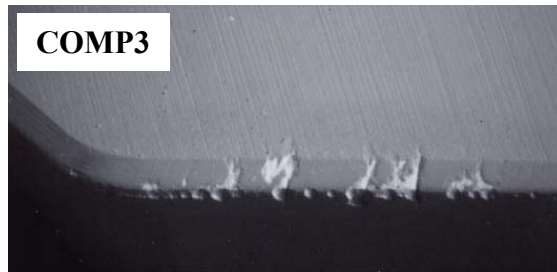
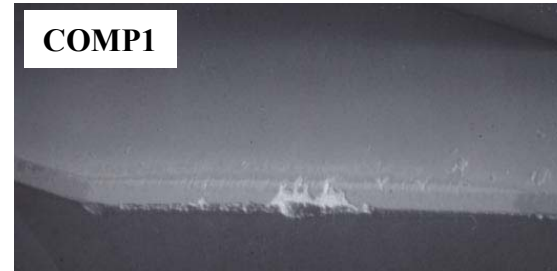
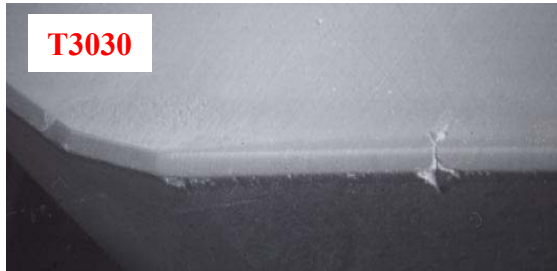
The substrate has the best balance of those features by optimizing the contained amount of cobalt.

If a cemented carbide grade has no MC, the strength in high temperature will be lower and plastic deformation will occur more easily. On the other hand, if MC is contained too much, thermal cracking will occur easily.

The substrate of T3030 grade has both higher strength in high temperature and higher resistance to thermal cracking by optimizing the composition of MC.

# WET CUTTING

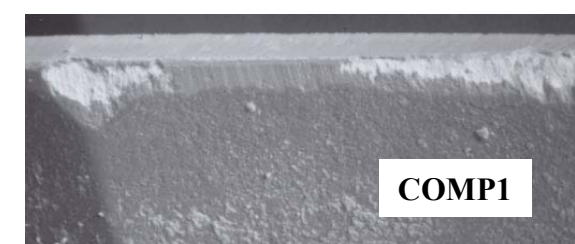
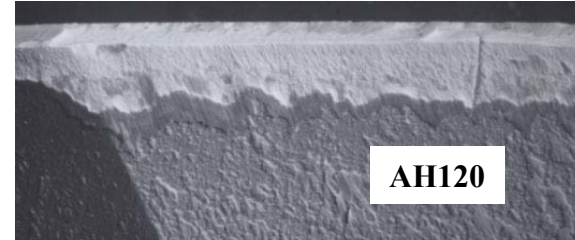
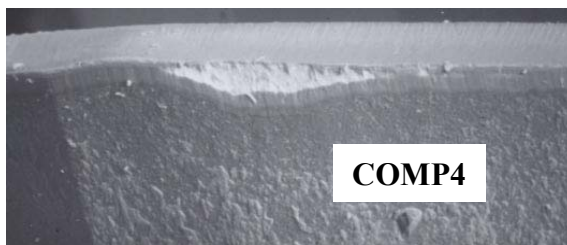
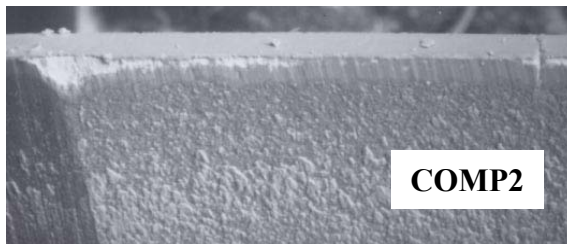
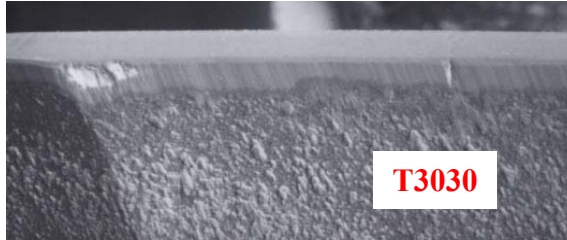
Mat'l: 4140, V=660 sfm, F= .008 ipt, Ap= .080" 2m cutting length



T3030 shows good resistance to thermal cracking where competitive grades show a high level of thermal cracking.

# DRY CUTTING

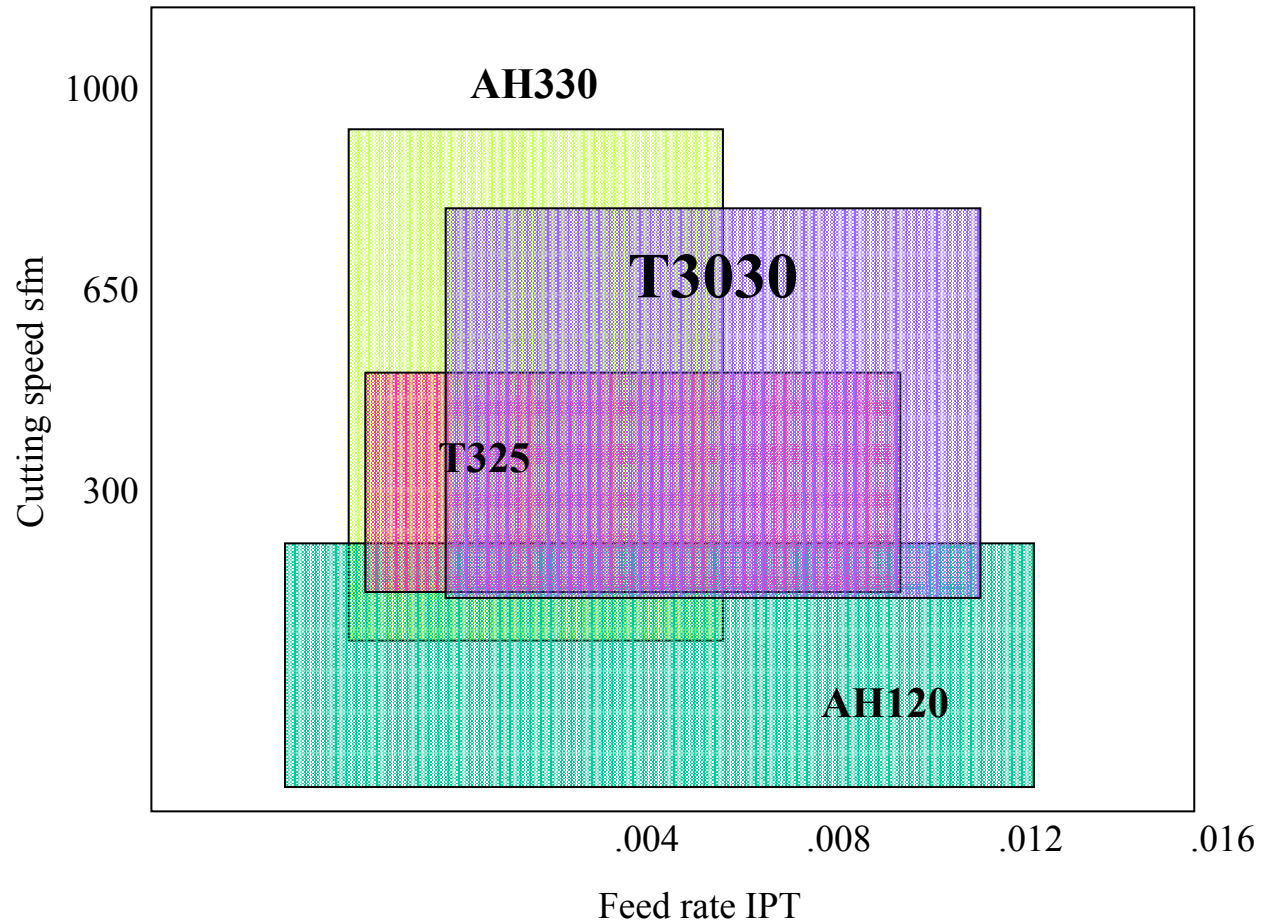
Mat'l: 4140, V=660 sfm, F= .008 ipt, Ap= .080" 4m cutting length



T3030 shows good toughness and wear resistance compared to competitive grades.

# Application area:

- Carbon, alloy, die and mold steels





# 2005 FDB Information

Tungaloy Corporation

## Just a few of the parts cut with T3030 in 2005 are:

- Weldments for superstructure for crane frames
- Flame cut I-beams for tow motor lift uprights - welded material
- Mounting brackets
- Mold for Caterpillar oil pan
- Mold for glass bottles

**\*T3030 proves to be a very tough grade for welds and wear resistant for molds**

**Get the **Tungaloy Advantage****

**with **T3030****

**Tough in tough jobs!**