DLC Coated Drills for Aluminum Alloy

DLC=Diamond

Like

Carbon

DLC Drill

Features:

- DLC (Diamond Like Carbon)
- Amorphous Substance Having Diamond Like Properties Characterized by a High Degree of Hardness, Low Coefficient of Friction and Wear Resistance
- Excellent Chip Evacuation Due to Unique Flute Geometry and Drill Point
- Extra Long Tool Life Due to DLC Coating
- End Mill Shank for Highly Precise and Accurate Drilling
- Excellent Drill for High Speed Machining of Aluminum and Copper Alloy

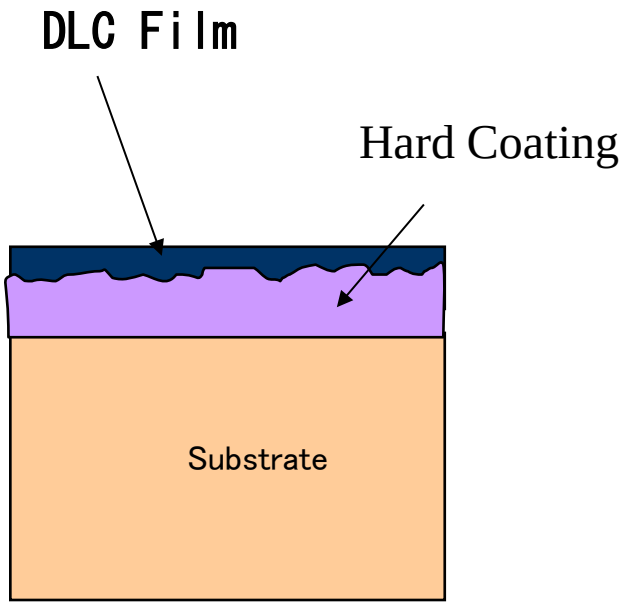
Materials

Aluminum 1060, 6061, Aluminum Alloys 4032, 5052, 7075, Copper Alloys and
ADC with SI up to 12%

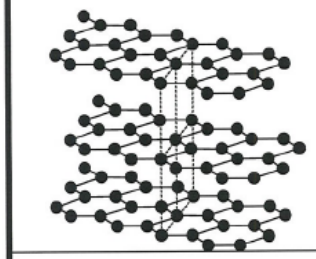
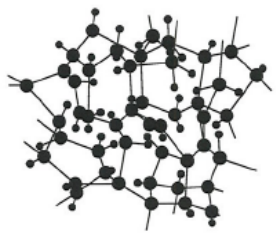
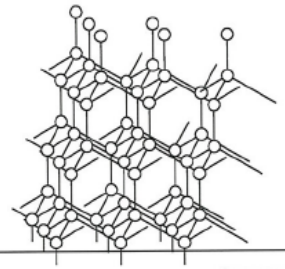
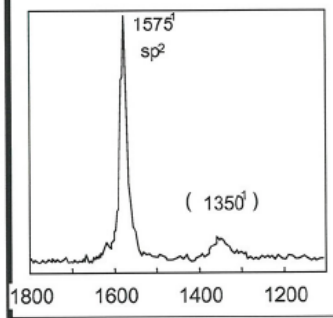
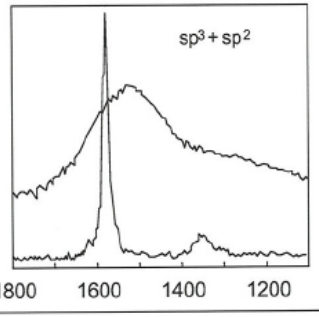
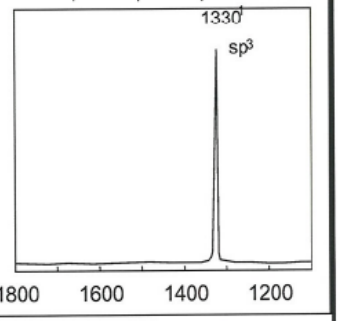
Japan & US Stock Item

Coating Characteristics of DLC

- High Resistance to Built-Up Edge by Super Low Friction Coating



Structure of D L C

Graphite	D L C	Diamond
		
		
Graphite	Amorphous	Diamond
C	C + H	C
-	1000~8000HV	10000HV

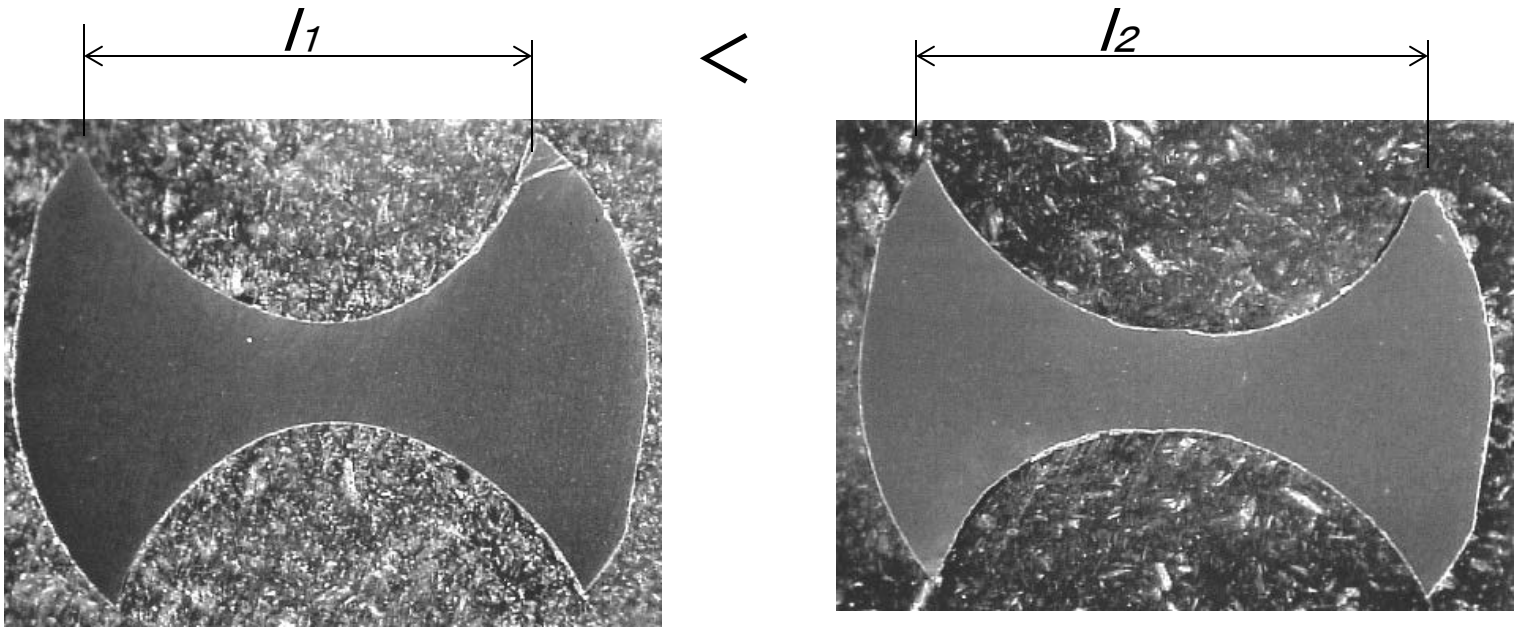
Solution in Drilling

1. Countermeasures

Anti-Built up Edge＝＞ Adoption of DLC Coating

Better Chip Evacuation＝＞ Gradually Increase of Flute Width

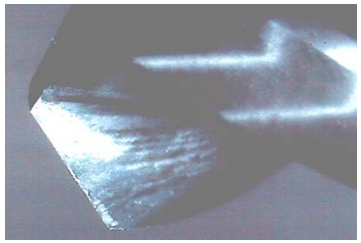
（Pat. P）



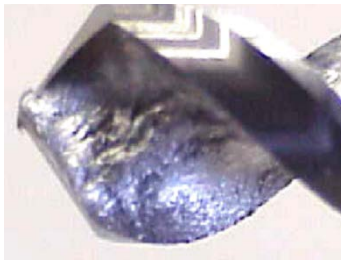
Top　　End

Performance of Dry Drilling in Aluminum Cast Alloy 12% Si

DLC Carbide Drill

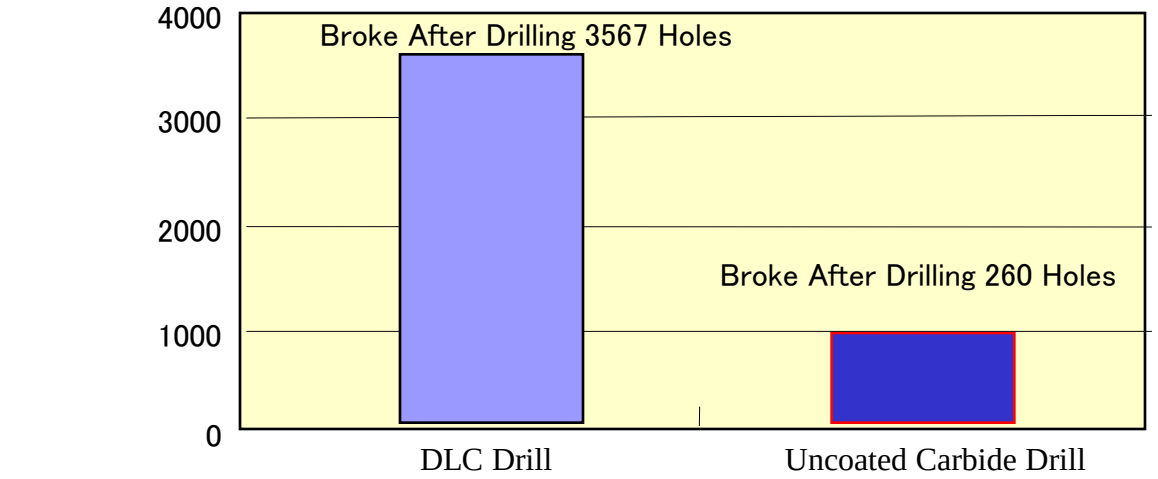


After Drilling 3000 Holes



Uncoated Carbide Drill

After Drilling 260 Holes



Conditions

Diameter: 5.5mm (.2165)
Speed : 100 m/min (330 SFM)
(5800 RPM)
Feed : 0.08mm/rev (18 IPM)
Depth : 16.5mm Blind (.6496)
Material : ADC12/ 383.0
No Coolant

Thank You