STANDARD ENGINEERING INSTRUCTION

Diamond-Like Carbon

DSF 1.3.5

1. Definition:

DLC (Diamond-Like Carbon) is deposited using a vacuum based PECVD process. The coating has several unique properties to improve performance. DLC coatings are a family of coatings made up primarily of carbon chains in an amorphous structure with sp^2 (triagonal graphite form) and sp^3 tetrahedral DLC (diamond form) bonding's.

2. Benefits:

DLC (Diamolith) is a pure Diamond-Like Carbon coating known for its lubricating and hard-wearing properties, ideal for various sliding applications. DLC will reduce wear during the component break-in period and will provide outstanding lubricity to minimise potential wear developing which can result in the virtual elimination of the wear mechanism.

Commonly used in the automotive industry on components like cam followers, buckets, and piston pins, it is also widely applied in medical implants due to its FDA compliance, non-toxic, non-cytotoxic, non-genotoxic, and non-carcinogenic nature. DLC is also REACH compliant.

3. Product Characteristics:

Diamond-Like Carbon (DLC)	
Hardness:	2000 – 3000 VPN
Colour:	Dark Grey / Black
Oxidation Temperature:	400°C
Deposition Temperature:	180 To 350°C
Thickness:	1 – 4 µm
Coefficient of Friction:	0.04 - 0.08 µ Dependent on surface finish. Test: 25N load non lubricated.