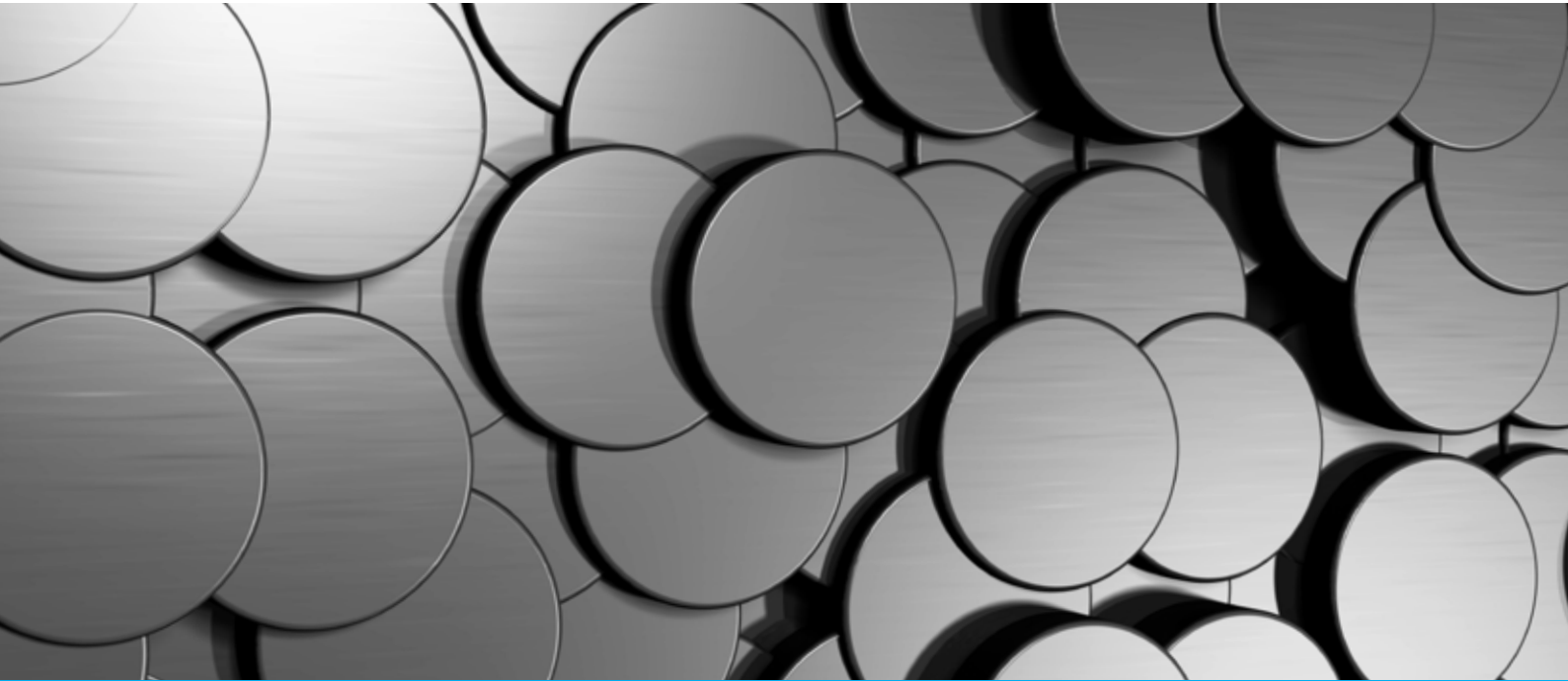


# CoolDiamond DLC<sup>®</sup>

By  **NORSELD**

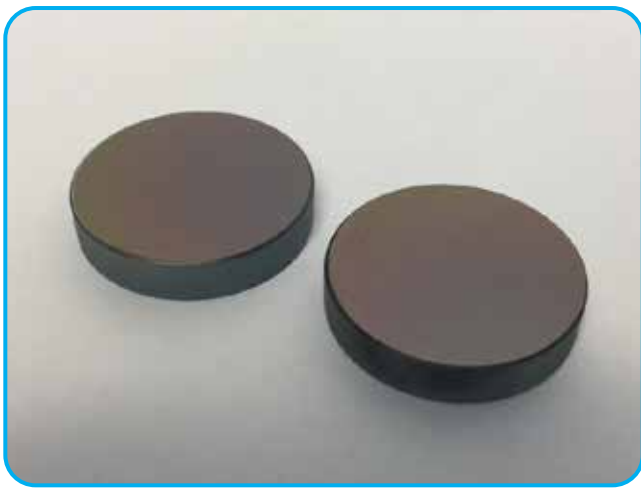


Norseld has a world leading specialty coating capability referred to as Diamond-Like Carbon (DLC). We call it CoolDiamond DLC<sup>®</sup>.

Our unique process gives superior quality, speed and we can coat at room temperature compared to other DLC coaters who can not.

CoolDiamond DLC<sup>®</sup> gives superior wear protection against dust, sand, salt spray, other 2<sup>nd</sup> body particles and various thermal and electrochemical applications.

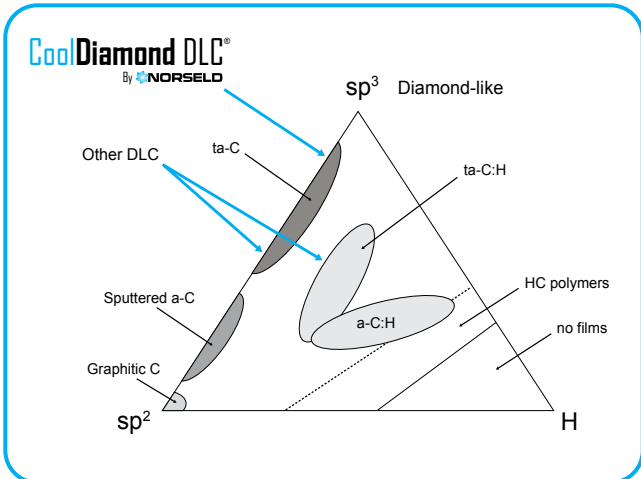
Applications include optical coatings, Infrared optics and thermal imaging, light weight head wear (e.g. night vision and Heads-Up Display), engine parts (tribology), composite tooling for aircraft parts and composite cutters.



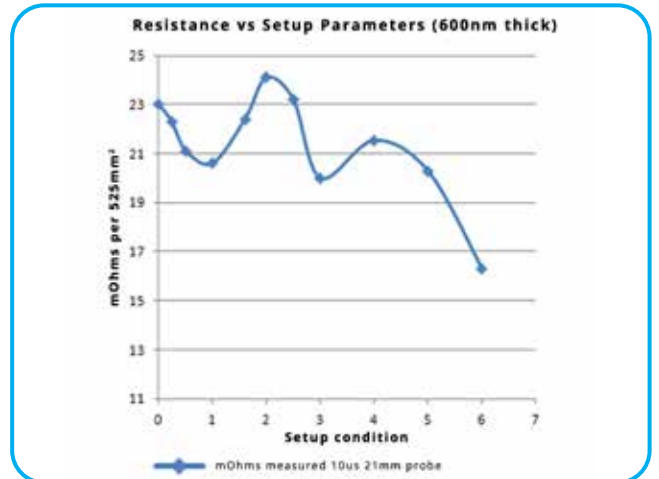
DLC coated IR lenses



DLC coated visors



Source: A.C. Ferrari and J. Robertson, "Interpretation of raman spectra of disordered and amorphous carbon", Physical review B, 1998, volume 61, number 20.



Surface resistance of CoolDiamond DLC®

Current DLC methods result in Sp3 percentages in the range of 50%-65% (sputtered a-C). Norseld DLC has a Sp3 percentage of ≥75% meaning it is a ta-C or tetrahedral bonded Diamond-like Carbon coating. The greater the Sp3 percentage the greater the uniformity and quality of the coating.

COOLDIAMOND DLC® Technical data	
Structure	ta-C DLC
Sp3 percentage (%)	≥75%
Coating thickness (nm)	10nm - >5 μm
Hardness	≥ 35 Gpa
Young's Modulus	373.05 Gpa
Roughness	Rms 0.24 nm
Deposition temperature (°C)	Room temperature
Refractive index	2.8 @ 622nm
Surface finish	Black
Coefficient of Thermal Expansion (CTE)	6.25 nm/C

Norseld Pty Ltd | 18 Lowe Street - Adelaide SA 5000 - Australia  
 Peter Shute | E: [peters@norseld.com](mailto:peters@norseld.com) | M: +61 458 800 575  
 T: +61 882 319 000 | [www.cooldiamonddlc.com](http://www.cooldiamonddlc.com)