CERTESS™ CARBON

D.L.C. tribological coatings

CERTESS™ CARBON coatings, implemented by PACVD (chemical deposition in vapor phase assisted plasma) are coatings of amorphous carbon base (DLC).

They offer the advantage of a high hardness (1500 - 3200 HV), but also a friction coefficient much lower than classic hard layers ones such as TiN, TiCN… (5 to 10 times lower).

This unique combination of properties offered new possibilities allowing the improvement of technical parts such as engine components. HEF is thus highly involved in the development of technologies aimed at reducing fuel consumption and CO2 emissions in the automotive sector, the solutions proposed by HEF being already used by motorists around the world to improve frictions:

- In rocker systems
- In automotive coupling systems
- In transmission systems

These coatings generally include several layers of various materials such as Cr, CrN, Si, W, WC- C, combined with a superior layer of amorphous carbon enriched or not with hydrogen.
The undercoat selection is based on several factors such as: adherence requirements, mode of wear, type of contact, friction conditions during the operation, applied charge…

HEF Groupe is present around the world to meet all your needs, through these HEF Durferrit or Techniques Surfaces entities.
You can locate us on www.hefgroupindia.in or contact us by email sales.hefipl@hefgroupindia.in

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Coatings	Architecture	Thickness	Hardness*	Treatment temperature	Maximum use temperature*	Friction coefficient (dry)*	Applications
Certess™ DT	a-C:H Metal doped	Generally 2-4 µm Adaptable following application	1200-1800Hv	150 - 350°C Following the substrate	350°C	0,20 - 0,25	Resistance to adhesive wear of mechanic parts Automotive components , Dry lubrication
Certess™ DCX	Cr,N + a-C:H	Generally 2-4 µm Adaptable following application	Generally 2500-3000Hv Complete range: 1000-3000Hv	150 - 350°C Following the substrate	350°C	0,11 - 0,15	Resistance to abrasive wear of mechanic parts during highly charged contacts, Reduction of loss by friction for automotive components
Certess™ DCY	Cr + WC,C + a-C:H						
Certess™ DDT	WC,C + a-C:H						

*Dependent on the test protocol

techniques surfaces

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