



**Technical specifications for plasma sprayed  
ThermoHold® Diamond Black™ exhaust coating**

<b>Bond coat</b>	Nickel based alloy
<b>Thickness of bond</b>	Min 30µm Max 50µm
<b>Ceramic material</b>	Proprietary mix of alumina titania based ceramics.
<b>Ceramic thickness</b>	150-250µm depending on customer requirements and substrate geometry
<b>Total coating thickness</b>	No more than 250µm unless specified
<b>Coating mass</b>	0.75-0.9 kg/m <sup>2</sup>
<b>Ave. coating density</b>	4350 kg/m <sup>3</sup>
<b>Bond coat density</b>	~7000 kg/m <sup>3</sup>
<b>Ceramic density</b>	~3600 kg/m <sup>3</sup>
<b>Surface texture</b>	Rough to the touch Approximately 15-25 Ra
<b>Colour</b>	Deep blue/black
<b>Emissivity</b>	~0.9
<b>Reflectivity</b>	~5-10%
<b>Thermal conductivity</b>	~15w/m <sup>°K</sup>
<b>Electrical properties</b>	Dielectric to high temperatures – point discharge from bond
<b>Surface hardness</b>	14 on modified mhos scale
<b>Max. coating temp.</b>	Stable to 1800°C will have colour change above 700°C in air
<b>Porosity of ceramic</b>	~9 %
<b>Young's modulus</b>	6-10 GPa
<b>Poisson's ratio</b>	0.21