News Release

Plasma sprayed ceramics enable the use of composites in high temperature environments on Aston Martin One-77

Road car debut for Zircotec's composites coating that enabled F1 teams to exploit the blown diffuser

OXFORD – The ceramic based material that originally allowed F1 teams to exploit the 'blown diffuser' aerodynamic advantage has made its road car debut on Aston Martin's One-77. Developed by Oxfordshire-based Zircotec, the ThermoHold® for composites material is applied to both the car's diffuser and underbonnet air intakes, enabling Aston Martin's designers to specify lightweight and aesthetic materials for high temperature environments.

"Composites are often unsuited to high temperature environments," says Zircotec's managing director Terry Graham. "Traditionally this leads to vehicle makers opting for more conservative materials that add weight or they rely on bulky heatshields that ultimately blunt performance. Our discreet ceramic coating protects the One-77 composites components and in the case of the diffuser, enables exhaust gases to pass through, just as they did in F1."

Zircotec's coating, proven in F1 and at Le Mans, can lower composite surface temperatures by more than 125˚C, creating opportunities to use composites under the bonnet. "Our coating not only protects the composite induction system from heat but also ensures that the air intake temperature is lower. Moreover, a decrease in this temperature creates a denser charge and is a feature relied upon by many Le Mans racing teams we supply," adds Graham.

Zircotec's proprietary process uses a gas plasma flame running at 12,000°C to apply the unique ThermoHold® heat resistant formulation in molten powder form on to the

composite components. Unlike paint, Zircotec's plasma spray application process ensures better adhesion.

As the automotive industry seeks to adopt more composites to achieve higher efficiency, the coating technology pioneered on the Aston Martin One-77 is likely to be adopted by other OEMs. "Engine downsizing is leading to hotter engines with tighter packaging," suggests Graham. "We are seeing future specifications suggesting underbonnet temperature increases to close to 200˚C. Our coating is a true enabling technology and will enable composites to be considered in this area of the car."

About Zircotec

Zircotec www.zircotec.com offers a wide range of plasma sprayed ceramic and metallic coatings that protect components against the effects of heat, wear, abrasion and corrosion. Lightweight and easily packaged, Zircotec's technologies can be applied to a broad range of different materials including metals and composites. Proven in F1 and the nuclear industry, the technology is now trusted by car manufacturers, industrial users, car enthusiasts and an increasing range of other applications to effectively manage heat and wear, enhancing performance and reliability. ZircoFlex™, the latest development from Zircotec, offers for the first time, a truly flexible ceramic coating.

About the Aston Martin One-77

One-77 fuses advanced technology with stunning Aston Martin design to create possibly the world's most desirable automotive art form. Based on a sophisticated carbon-fibre One-77 chassis with a hand-crafted aluminium body, this 7.3 litre V12 supercar will deliver exhilarating performance for a strictly limited number of discerning customers.

Technical Specification

Two door carbon fibre monocoque body structure sports coupe with hand crafted aluminium exterior body panels

Front Mounted 7.3 litre naturally aspirated V12 - 750 bhp (760 PS, 559 kw)

Rear Mid Mounted 6 speed Automated Manual Transmission

Pictures

 	Advanced Zircotec coatings enable Aston Martin One-77 to adopt Formula One style blown diffuser.
	The bespoke process, on which a patent application has been filed, uses a gas plasma flame running at 12,000°C to apply the unique ThermoHold® heat resistant formulation in molten powder form on to the carbon fibre diffuser and air intakes

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