



## News Release

**New ceramic based coating for composites and a new flexible ceramic based heatshield material combine the highly reflective properties of real gold with the conductive heat protection of ceramic.**

*ThermoHold® GOLD (for composites) and its sister product ZircoFlex® GOLD heatshield material provide protection from both conductive and radiant heat sources thanks to Oxfordshire firm developing a method to apply real gold to its ceramic products.*

**OXFORD** – Engineers who previously had to rely on multiple products to protect composites and heat-sensitive parts from different forms of heat damage can now specify a single coating or heatshield from Zircotec. Thanks to its unique combination of ceramic and gold, ThermoHold® GOLD (for composites) and its sister product ZircoFlex® GOLD provide protection from both conductive and radiant heat sources thanks to the blend of ceramic insulation and real 24 carat gold providing 98 percent reflectivity.

Research conducted by Zircotec on existing 'gold' heatshields available highlighted that many did not actually contain gold. These were simply aesthetic finishes with no real improvement in heat reflectivity. Other more expensive products were in fact copper-based and whilst these were effective when new, the copper quickly oxidised when temperatures exceed 500°C, reducing its ability to reflect heat away. Furthermore, neither of the products tested offered any real protection from conductive heat. "The reflective properties of gold have long been trusted to protect sensitive components against heat," says Terry Graham, Zircotec's managing director. "However, real gold foil is rarely used; it is highly expensive and offers little or no protection against conducted heat. Our new products enable engineers to manage both forms of heat with a single gold finished coating or ZircoFlex GOLD heatshield product, thereby helping to solve packaging and installation issues."

ZircoFlex *GOLD* heatshield is just 0.17mm thin and at 230 g/m<sup>2</sup> is half the weight of the current ZircoFlex product. Combining superlight weight with its ability to be cut and folded makes it attractive for weight sensitive or package restricted applications such as Formula One, high-end motorsport, aerospace or defence. Supplied as a flat sheet, it can be used to protect ancillaries such as batteries as well as bulkheads, composite parts and fuel tanks.

ThermoHold *GOLD* (for composites) is the result of a two year programme to develop a robust capability to apply gold to our ceramic coating and yet remain commercially affordable. Careful preparation and mixing of the feedstock combined with a new 'layering' application process was eventually determined to give the best results. "ThermoHold *GOLD* for composites provides the neatest and lightest way of protecting composites in high temperature applications," claims Graham. "Just 170 microns coating can provide significant surface temperature reductions."

Prototype samples have already generated significant interest in professional motorsport. "Race engineers are really excited, they understand we are offering double the protection for half the weight," adds Graham. "A potential application around the cockpit in endurance racing cars could lower the need for power sapping air conditioning during races."

Both variants will be available from mid-January from Zircotec and its authorised distributors.

### **About Zircotec**

Zircotec [www.zircotec.com](http://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 and ZircoFlex™ offers, for the first time, a truly flexible ceramic coating.

## Pictures



*Ability to apply real gold onto ceramic creates innovative coating with 98% reflectivity, yet still insulates against heat in both heatshield and plasma sprayed coating variants.*



*Combining superlight weight with its ability to be cut and folded makes ZircoFlex® GOLD attractive for weight sensitive or package restricted applications.*



*Ideal for a range of plastics, ThermoHold® GOLD (for composites) provides protection from both conductive and radiant heat sources.*

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