



# Surface Engineering in Extreme Environments



Experts in repair and maintenance at your SERVICE  
*Stronger, with Castolin Eutectic*



## Proud to be part of the Team

### HMS Queen Elizabeth and HMS Prince of Wales Aircraft Carrier

Surface Engineering is one of the 22 national competencies and enablers across all high value manufacturing sectors. In modern 'High Value' manufacturing it is impossible to design new products without modifying the surface to achieve performance.

The advanced Castolin Eutectic workshop in Newcastle, UK, has provided patented state of the art surface engineering technology befitting the high value manufacturing achievements made in the building of the HMS Queen Elizabeth and HMS Prince of Wales Aircraft Carrier.

## A Proud Heritage

The North East of England has a proud history of ship building and support services and is also home to the Castolin Eutectic subsidiary in the UK since 1927. The advanced Castolin Eutectic workshop has long been one of the unsung heroes of technological innovation, continually proving itself as a worthy player in a global arena.

Now the workshop continues to pave the way for surface engineering innovation through inward investment and ground-breaking research and development.



# The Need for Change

In the case of an aircraft STOVL (Short Take Off Vertical Landing), traditional paint systems are no longer capable of meeting the extreme environments experienced on the surface of the aircraft carrier deck. The flight deck of the QE Class Carriers is subjected to an extreme aero-thermal environment when the Joint Strike Fighter F-35C (CV) variant is conducting a hover transition and vertical landing on the surface.



In May 2012, the UK government, in association with the Aircraft Carrier Alliance engaged the Castolin Eutectic UK subsidiary to investigate and develop a suitable deck coating that would withstand the aero thermal environment and gas wash exhaust, to the technology readiness levels acceptable for large scale application on the HMS Queen Elizabeth and HMS Prince of Wales. Following years of innovation and development, in 2014, we were awarded the prestigious contract to apply the specialist metallic non-skid thermal metal spray (TMS) coating system, combined with a unique sealing system.

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# Castolin Services



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