



Surface Engineering in Extreme Environments



Experts in repair and maintenance at your SERVICE

Stronger, with Castolin Eutectic



Excellence through innovation Ongoing Research and Development

Excellence through innovation!

With a growing portfolio of services and an increasingly comprehensive range of services our investment in research and technology is at the forefront. Twothirds of the advanced Castolin Eutectic workshop in Newcastle, UK, investment is aimed at improving the technical and environmental performance of our products, for example investing in hard chrome replacement for aerospace, oil & gas, steel, marine and energy sectors. Other areas include renewable energy and nanotechnology.

Coatings on wind turbine blades (particularly offshore) are prone to degradation mechanisms. The Castolin Eutectic subsidiary in the UK is actively involved in numerous research programmes to develop a nanoparticle-based solution that simultaneously improves both the UV protection properties and the mechanical resilience of high performance coatings.

This will extend paint maintenance intervals, significantly reducing maintenance costs and contribute to the sustainability of these high growth markets in the longer term.

Downhole Mud Rotor Technology

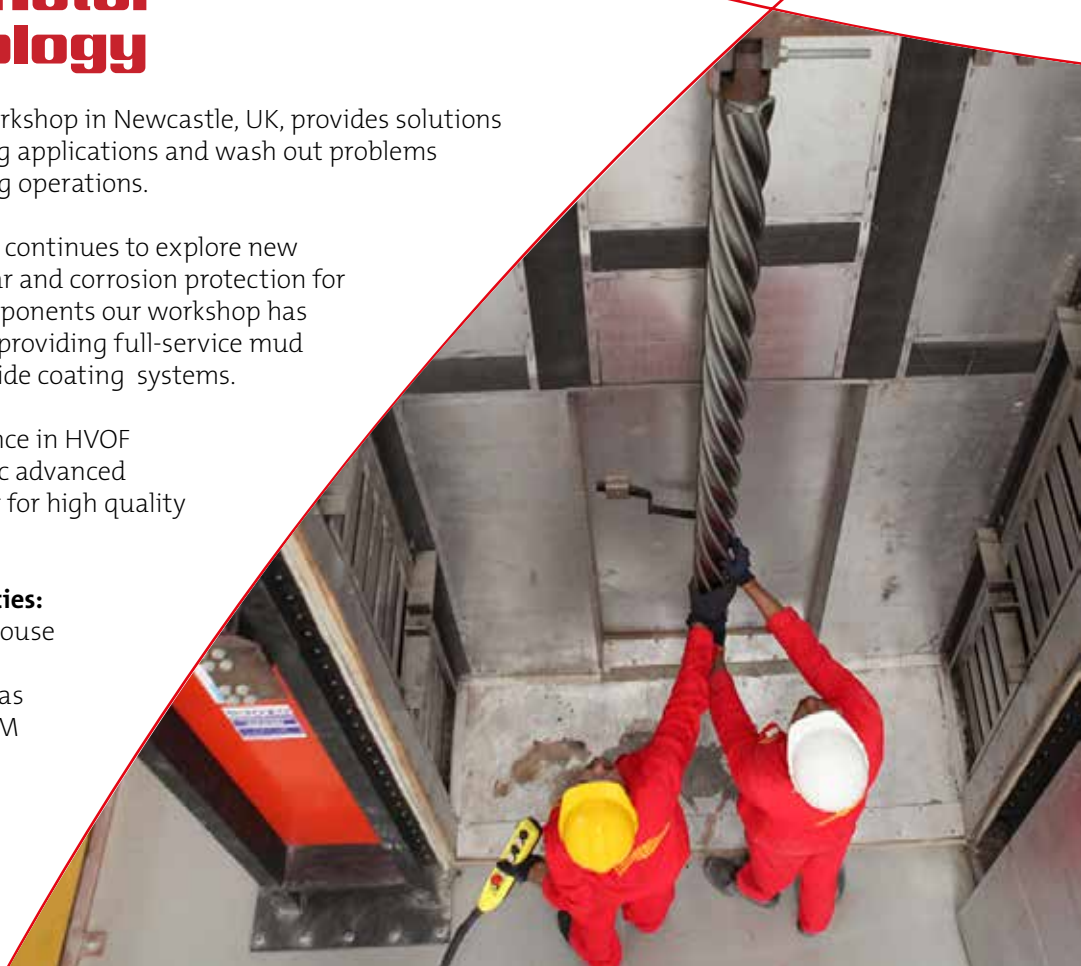
Castolin Eutectic's workshop in Newcastle, UK, provides solutions for directional drilling applications and wash out problems encountered in drilling operations.

As oil and gas exploration continues to explore new territories for better wear and corrosion protection for the mud motor rotor components our workshop has answered this demand by providing full-service mud rotor repair and HVOF carbide coating systems.

With over 30 years' of experience in HVOF applications, Castolin Eutectic advanced workshop is your go-to vendor for high quality coatings.

In-house Machine Shop Capabilities:

Our workshop in the UK has in-house capability to remove any carbide coating, weld repair damaged areas and HVOF carbide coat back to OEM specifications. We also have the ability to polish our coatings to a 'stator ready' finish.





Potential benefits and value:

Our Castolin Services network of specialized workshops will bring you a unique approach to your needs in coatings

- Water repellent, UV-resistant.

We are part of a large consortium aiming to develop and validate novel materials, material models, and design optimization methods for the next generation wind turbine rotor blades.

Our focus is on developing an innovative surface engineered high resistant coating system for offshore applications protecting blade surfaces from abrasive deterioration, moisture uptake and wear.

This research aims to result in several improvements in wind turbine rotor blade materials and design.

Potential benefits and value:

- Water repellent, UV-resistant, protection against abrasive deterioration and general wear.

Inter - Company Capabilities:

(www.castolin.com)

- Mud Motor Rotors
- Stub welding (box and centre)
- Stabilisers, Adjusting Rings
- Bearing Housings
- Jar Mandrels
- Rebuild of Rotary Stearable Drive Shafts
- Rebuild of Rotating & Reciprocating Parts

Unique benefits and application value:

- Our coatings are backed by proven field data showing asset life extension of up to x 4 when compared to traditional solutions.
- Hard and resilient with many environmental benefits such as, no chrome stripping - resulting in less harmful emissions. Occupationally and environmentally compliant.



Processes

High Velocity Oxygen Fuel Spray (HVOF)

PRAXAIR-TAFA JP800 and JP5000.

Unique benefits and application value:

The high velocity coatings process produces the highest quality carbide and metal coatings available in the industry today.

- This process is characterised by near wrought densities and unsurpassed bond strengths.
- HVOF coatings can withstand the most hostile environments in terms of wear and corrosion in industrial applications.

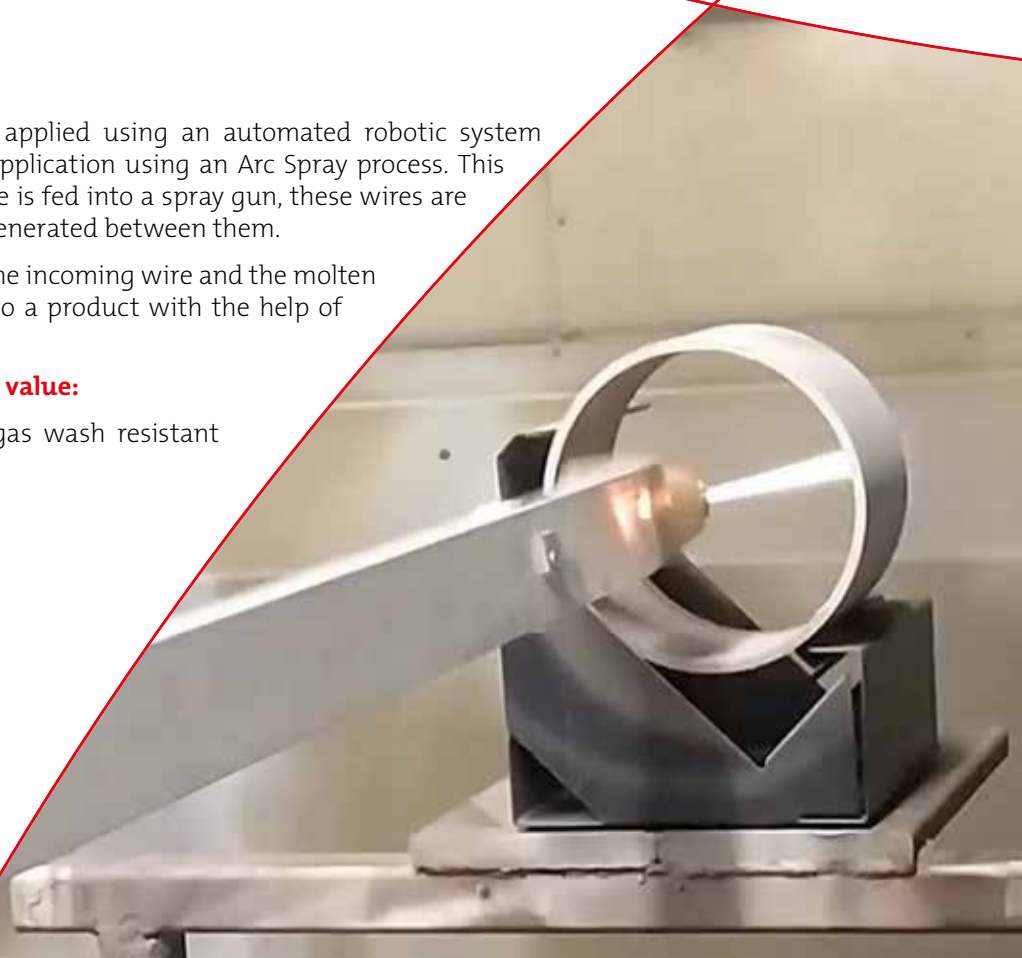
Process:

The coatings system is applied using an automated robotic system combined with manual application using an Arc Spray process. This process is where metal wire is fed into a spray gun, these wires are then charged and an arc is generated between them.

The heat from this arc melts the incoming wire and the molten material is then deposited onto a product with the help of compressed air.

Unique benefits and application value:

- Non-skid, durable, thermal gas wash resistant coating system.



Advanced Technology

QEC Carrier Deck Coating System:

The Aircraft Carriers are the largest warships ever built for the Royal Navy and capable of carrying up to forty aircrafts.

The ship is designed to operate the vertical and/or short take-off landing aircraft the F-35B. When the powerful F-35B engines are directed downwards onto the deck during a vertical landing, the gas wash of the engine reaching 600°C would damage the conventional flight deck paint system, resulting in the aircraft not being able to land safely.

This meant a new innovative system was required by the Navy to ensure that the flight deck remained protected and operational throughout its service life of 50 years.

The advanced Castolin Eutectic workshop in Newcastle, UK, has developed a new coating system which can withstand the impact of the F-35B engines whilst maintaining its tough, durable and anti-skid properties. This coating was applied to critical parts of the flight deck, 5 full sized football pitches, on an exposed ship deck, 56m above ground level.

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Castolin Services



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Your resource for protection, repair and joining solutions

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