TWI AND THE AEROSPACE INDUSTRY

TWI has been delivering innovation to the global aerospace industry, including the main airframe, engine and component manufacturers, for decades.

Working with the broadest range of aerospace materials and safety-critical applications, we have supported the largest aerospace companies with welding, joining, inspection and testing methods; reducing costs, adding functionality, developing innovative processes and solutions, and reducing R&D risk.

Previous projects include laser beam and friction stir welding of airframe structures, electron beam welding of landing gear and the precise joining and surface engineering of a wide range of aircraft components.

We have also played a lead role in the application of emerging technologies for the aerospace industry, such as other friction processes, such as channelling and near-net shape, the application of sensor technologies, additive manufacture of engine components, light-weighting, metal / composite joining, and battery technologies.

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Aerospace Sector Expertise

Our expertise in the aerospace sector includes:

- Welding and Joining (including friction welding, laser welding and electron beam)
- Additive Manufacturing
- Materials Development (including metals and composites)
- Coatings Technology
- Non-Destructive Testing (NDT)
- Condition and Structural Health Monitoring
- Process Modelling
- Microfabrication
- Laser and Electron Beam Processing
- Performance and Reliability of Aircraft Structures
- Welding and NDT Training

Adding Value

Partnering with TWI allows you to benefit from:

- **Reduced Costs** – through improved processes and production rates
- **Added Functionality** – through the introduction of materials with dual or improved properties
- **Know-How and Expertise** – gained over decades of experience working with many of the largest names in the sector
- **Certified Quality** - to ISO 9000 series of standards
- **Responsive Problem Solving** – rigorous lab-based research to meet current and future challenges of the industry

TWI Support

TWI research and development is undertaken in strict confidence with both individual experts and multi-disciplinary teams being available to solve all kinds of challenges related to material joining, functionality, coatings, surfacing, light-weighting, and more.

Our work in other industries, such as the space and automotive sectors, allows us to migrate technologies and solutions between applications to find the best solutions, while covering the entire scope of development activities, from design concepts through to advanced materials assessment, simulation and modelling, and manufacture.

We also offer in-service support using science and our technological experience to solve any problems and mitigate against failure, creating bespoke solutions for our clients. As part of our Core Research Programme, TWI has developed innovative joining technologies which are either ready for use in the aerospace sector, or could be further developed for commercial exploitation.

Our globally recognised track record of expertise means that we are actively involved in a number of committees for standards related to the aerospace sector, while we also offer training services in welding and NDT across the industry.

FOR MORE INFORMATION, PLEASE CONTACT US AT CONTACTUS@TWI.CO.UK.

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