



Large-Scale Thermal and Cold Spraying Facility

Custom-made spraying facility housing six-axis robot-mounted Impact Innovations 5/11 Cold Spray System

State-of-the-art, large-scale facility, hosting TWI's range of thermal and cold spraying technologies for various industrial applications, including functional coatings, repair, and additive manufacturing.

Features and Benefits

- Versatile facility designed to be reconfigured for multiple industrial applications of thermal and cold spray technologies
- Can function as one very large cell or be partitioned into two spray cells
- Use of six-axis robotic manoeuvrability and appropriate manipulators enabling deposition of coatings on large components with complex geometries

Some Applications

- Development, testing and optimisation of new coatings to provide specific surface functionality, e.g. electromagnetic shielding, combating wear, corrosion, thermal degradation, etc
- Development of coating procedures and manufacturing specifications
- Upscaling and pre-production procedure development, demonstration and validation
- Development of cold spray techniques for additive manufacturing and/or repair of metallic components
- Development of corrosion-mitigating spray coatings for nuclear, offshore wind and marine sectors

Technical Specification

- Soundproof booth 7.5m wide, 6m deep and 4m high with state-of-the-art extraction system
- OTC FD-V50 robot arm: six-axis manipulator with a payload capacity of 50kg
- Can accommodate a variety of thermal spray technologies, including high-velocity oxy-fuel (HVOF), high-velocity air-fuel (HVOF), cold spray, twin wire arc spraying, wire flame spray, and plasma spraying
- Houses latest-generation high-pressure cold spray system (Impact 5/11), a low-pressure cold spray system (Titomic D523), and bespoke laser-assisted cold spray (LACS) capability

