

INNOVATION IN MANUFACTURE

Shortlisted: CCP Gransden

An advanced single-stage overmoulded CF-PEEK thermoplastic composite access panel for aerospace applications; manufactured in a fully automated environment within three minutes.

CCP Gransden present an advanced single-stage overmoulded CF-PEEK thermoplastic composite access panel demonstrator for aerospace applications; manufactured in a fully automated environment within three minutes.

Collaborating with ENGEL UK, Toray Advanced Composites, and an Aerospace Tier One, in projects supported by Invest Northern Ireland and Innovate UK, the innovation is a thermoplastic composite technology with a full-scale demonstrator focused on aerospace structural applications.

The technology is termed “single-stage overmoulding” and combines the thermoforming of aerospace grade pre-consolidated laminates with injection moulding compound in a fully automated cell. This single-stage process also eliminates multiple machines, multiple tools, and process steps -contributing to a safer, leaner, more efficient process. High volume applications in excess of 200,000 parts/annum are achievable.

The demonstrator is representative of a typical structural access panel, employing a formed carbon-fibre/PEEK composite laminate featuring gentle double curvature. Injection moulding is used to create stiffening elements to enhance directional rigidity and seal the edge of the laminate, reducing assembly operations and providing opportunity for weight reduction through structural optimisation.

This innovation is one of several technologies at CCP Gransden which enable robust and lightweight



composites to be manufactured for high-volume applications.

Key benefits:

- Greater potential for OEM’s to benefit from the numerous advantages of composites
- 3 minute cycle time = High volume manufacturing
- Design integration and freedom
- Lean, safe, efficient automated process
- Reduced component cost
- Reduced factory footprint required
- Reduced waste material
- Increased quality control and validation
- Recyclability - Thermoplastic matrix
- Lower energy demands in production

Website: www.ccp-gransden.com

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