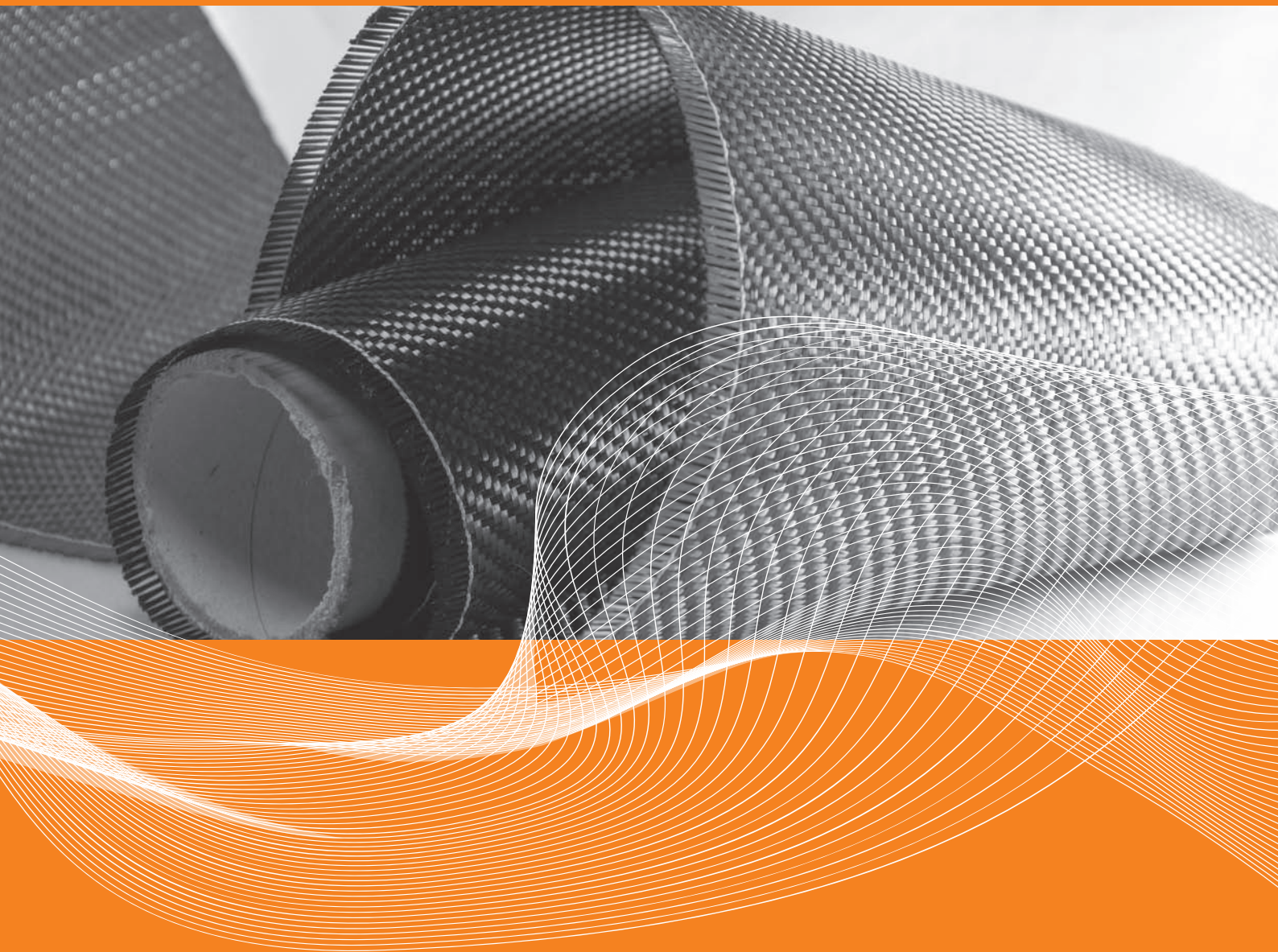


COMPOSITES

Composite parts require a rapid or CNC tool to form a combination of a support matrix and a reinforcement material. This, when combined, gives characteristics superior to the properties of the individual component materials.



Processes

- Carbon Fibre – bagged, unbagged, pre-formed
- Glass Reinforced Plastic (GRP) – hand lay and sprayed
- Pultrusion
- Insert moulding/casting
- Lamination

Materials

- Thermosetting plastics eg. epoxy and polyester resin, melamine and urea formaldehyde
- Tufnol
- Ceramics/Glass/Kevlar
- Laminate wood

Applications

- Lightweight panels
- Renewable energy
- Large mould tools/marine

Process	Time	Material	Quantity	Application	Examples
Composite tooling	3-4 weeks	GRP/CNC/Ureol	1-5	Lightweight parts	N/A
Composite parts	3-4 per week	GRP/Carbon Fibre	1-100	Functional parts, cosmetic A-surface only	Car panels
Insert moulding/casting	2-4 weeks	Polyurethane, epoxy resin with reinforcement	1-1000	Functional reinforced parts	Seat base and armrest

