



# Alfa Romeo's state-of-art sports car

Alfa Romeo's eagerly awaited 4C sports coupé is the world's first production car to feature "prepreg" carbon fibre technology

Dry weight	895kg
0-100km/h	4.5 seconds
Top speed	257km/h
Fuel consumption	6.8 litres per 100km

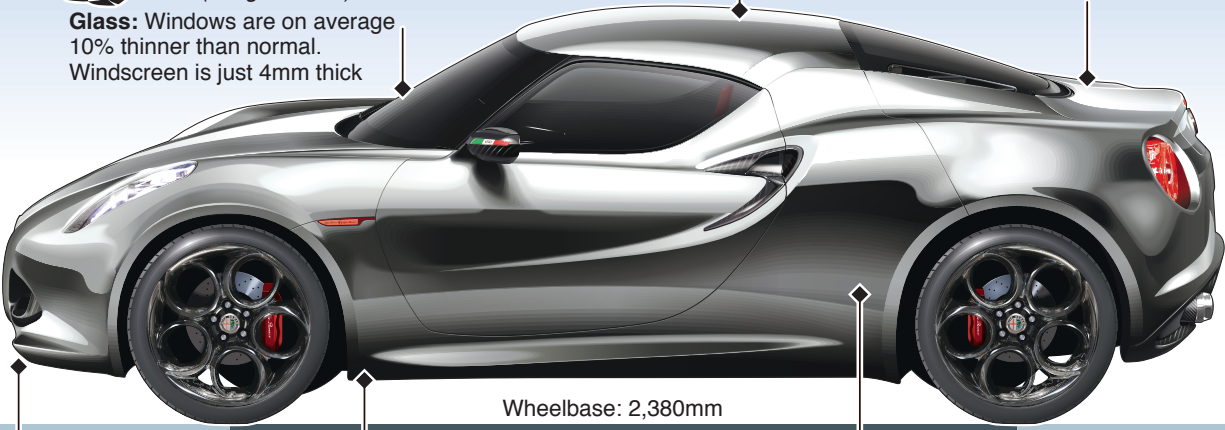
 Weight saving compared with steel. (Density of steel 7.9 gram/cm<sup>3</sup>)

**Aluminium:** Roof reinforcement cage and front and rear beams.  
**Cobapress process** combines advantages of casting with those of press forging to cut porosity, reduce weight and increase rigidity


 **65% (2.7 gram/cm<sup>3</sup>)**

**Glass:** Windows are on average 10% thinner than normal.  
Windscreen is just 4mm thick


**Engine:** 1,750cc turbocharged four-cylinder petrol. Use of aluminium for engine block saves 22kg  
**Power:** 240PS (237bhp) 6,000RPM




**PUR-RIM:** Injected polyurethane bumpers and mudguards

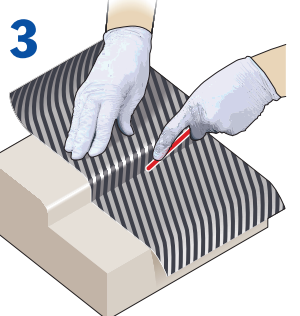
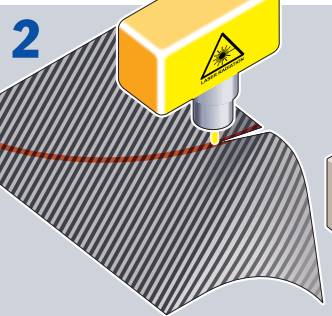
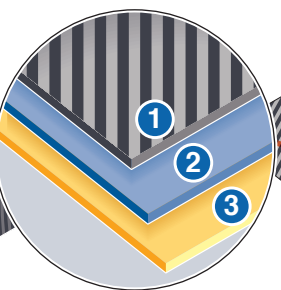
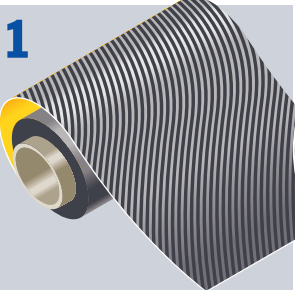
 **85% (1.2 gram/cm<sup>3</sup>)**

**Prepreg carbon fibre:** Chassis weighs only 65kg yet makes up 25% of car's volume

 **77% (1.8 gram/cm<sup>3</sup>)**

**SMC:** Sheet Moulding Compound composite used for bodywork

 **20% (6.3 gram/cm<sup>3</sup>)**

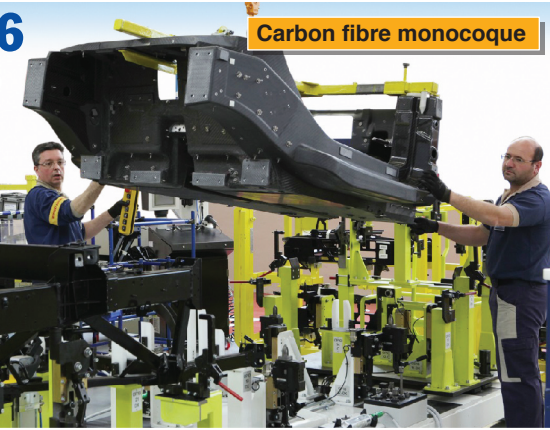
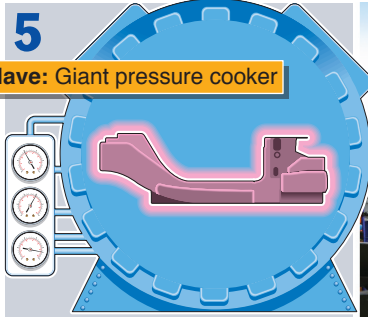
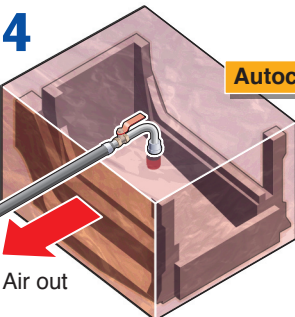


**Prepreg:** Carbon fibre reinforcement fabric coated with layer of epoxy polymer which has already been mixed with hardener at manufacturing stage

- 1. Carbon fibres aligned parallel to each other for greatest strength
- 2. Resin layer – tacky at room temperature
- 3. Backing film

**Templates:** Laser templating system cuts precise prepreg layers, generated from Computer Aided Design database

**Fabrication:** Multiple layers carefully laid inside mould. Layers orientated in predetermined directions to achieve desired strength



**Vacuum bagging:** Mold and laminate is placed in plastic bag. Vacuum compacts fibre layers

**Autoclave:** Laminate is cured during temperature/pressure cycles in autoclave. Resin flows into surrounding fibre bundles

**Carbon fibre monocoque**