

Quickstep: A Manufacturing Solution for Advanced Composite Components on High-Performance & Niche Vehicles

Dale Brosius

Quickstep Technologies Pty. Ltd.

Dr. Bronwyn Fox

Victorian Centre for Advanced Materials & Manufacturing

ABSTRACT

Offering a weight savings of 75 percent over steel, carbon fibre gives sports cars a real advantage in acceleration and top speed, and enables all automobiles to achieve improved fuel economy. Commercialization continues to be hindered by high material, tooling and processing costs and slow production rates. Developed in Australia, the Quickstep process utilizes fluid heating and cooling, combined with a “floating” mould concept to process advanced composite components in a fraction of the time and at significantly lower costs than traditional autoclave techniques. Investment and tooling investment is reduced and volumes increased. This paper presents the advantages of the process, and discusses how specific technical needs of the automotive industry are being addressed, including weight reduction, improved surface finish, and flexible assembly techniques for structures. While nominally aimed at carbon fibre components, the process is also suited for continuous glass and hybrid structures. Case histories and economic comparisons will also be presented.