



Race car seat breakthrough by Fibreworks Composites

Fibreworks Composites (Mooresville, North Carolina, USA) specializes in the design, engineering and production of advanced carbon composite components for Formula 1, Le Mans Series, NASCAR and Sprint race cars.

Two of its latest projects are the development of seats for NASCAR and Sprint racecars that represent significant technological breakthroughs. In the past, virtually all racecar seats for the premier race formulas have used aluminum or aramid honeycomb as the core material. The team at Fibreworks, headed by Ralf Brand, the Chief Technical Officer, has metaphorically speaking 'broken the mould' by developing seats that use Divinycell foam cores.

The decision to take this approach was due to Fibreworks' belief that foam cored seats are more cost-efficient than existing honeycomb models.

Fibreworks maintains that using foam core is much easier and more repeatable than is the case with honeycomb. Unlike honeycomb, the Divinycell foam core can be thermoformed to the required shape, facilitating the lay-up of the carbon-epoxy prepreg. In addition, the foam core provides a much larger bonding area.

Another benefit of the foam core approach is that the Fibreworks seats are actually lighter than equivalent 'honeycomb' seats.

These new seats meet both the appropriate SFI static load test and the dynamic testing required by each sport's governing body. The NASCAR dynamic testing is very stringent indeed. It involves a 90 kg (198 lb) dummy being crash-tested six times. Each time the test is carried out the seat experiences an incredible force of 69 g. This is eight times the energy

level experienced by a Formula 1 car when it is subjected to the mandatory front end crash test. To pass the NASCAR test, the seat must not show any signs of cracking or deformation. Another project where Fibreworks is using Diab cores is in the full carbon fiber body of a car that, powered by an internal combustion engine, is designed to exceed 800 kph (500 mph). www.fibreworkscomposites.com