

The market in figures

The European composites market was badly affected by the recession earlier this decade. Helped along by the 'lightweighting' hype, the market has largely recovered, and is doing well.

Speaking at the ICC composites conference organised last November by the AVK Federation of Reinforced Plastics, AVK managing director Dr Elmar Witten, gave an overview of the most recent market figures available. According to his report, the composites market in Europe amounted to some 2.95m tonnes in 2017, or less than one third of the world market. Unsurprisingly, short glass fibre reinforced thermoplastics and GRP-long glass fibre reinforced thermosetting and thermoplastic polymers – accounted for the lion's share of this, with volumes amounting to respectively 1.400m tonnes and 1.118m.

Calling carbon fibre reinforced plastics (CFRP) "lucrative and interesting", Witten noted that at 40,000 tonnes, their significance in terms of volume is relatively low, as is that of composites processed by infusion, of which a mere 0.3m tonnes were produced.



Elmar Witten:
"Lightweighting remains important, if not more expensive and involves the right material in the right place"

The GRP market, however, has still not regained the level achieved in 2007, when a peak volume of 1,195m tonnes was achieved. After plunging to 0.815m tonnes in 2009, a drop of over 20% – by comparison, EU-28 overall industrial production dipped by just over 10%, – the GRP market has been steadily clambering back, with the AVK expecting the figure for 2018 to come to 1.141m tonnes.

In geographical terms, the Iberian peninsular (Portugal, Spain) has lost out considerably. Volumes fell from around 270,000 tonnes in 2007 to



CFRP potential: Branch Technology has produced what is claimed to be the world's largest 3D printed structure

150,000 tonnes in 2013 and have since stagnated at close to that level. German volumes, by contrast, dropped slightly from 150,000 tonnes in 2007 to 120,000 tonnes in 2009, but have since grown, and are expected to have reached 230,000 tonnes in 2018, displacing the Iberian peninsular as largest market by a wide margin. The crossover occurred in mid 2011, while Portugal/Spain were still falling and: "They won't come back to their original position", Witten said.

The AVK European data excludes Turkey, which has with 250,000 tonnes a larger market than Germany, focussed on GRP pipes and storage tanks.

In terms of composite types, the thermoplastic GMT/LFT market segment continues to outpace slow or no growth in other types of composites, having grown by a factor of four in the past 20 years. Thermoplastic GMT/LFT growth outpaced thermosetting resin transfer moulding (RTM), which had a "period of hype for some years, but which grew by a factor of three over 20 years", Witten observed. Both of these material solutions have benefited significantly from increased interest in automotive

lightweighting. The lightweighting hype is now over, Witten said, as lightweighting at any cost has been replaced by more sober attitudes of accepting it "if not more expensive" and when it involves "the right material in the right place".

The CCeV carbon fibre association, then presented its figures. The association estimated the world CFRP market value at USD 16.48bn, of which thermosetting accounted for USD 11.37bn, and thermoplastic for USD 4.75bn. Aerospace accounted for 55,310 tonnes (36%) of total 154,700 tonnes CFRP volume, automotive 37,310 tonnes (24%). As to be expected, the difference in value was larger: Aerospace USD 12.92bn (56%) automotive USD 4.17bn (18%).

The CCeV presentation ended with three photos, one of "the world's largest 3D printed structures", printed by Branch Technology in 90 CF-ABS parts, another of an Airbus Airbus A³ Vahana electric flying taxi prototype that had its maiden flight in February 2018, and also of the WARR pod developed by Munich Technical University, which won the 3rd SpaceX Hyperloop pod competition in Hawthorne with a top speed of 457 km/h.



CFRP potential: The Airbus Taxi has already made its first flight