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Interview with Paolo Zanzola, Hexcel

The 2017 ISPO sports show attracted a record 85,000 visitors from around the world to Munich over four days from February 5-8th. With its specialised range of composite products, Hexcel stood out among some 2,732 exhibitors from around the world showcasing primarily sportswear and equipment. *Inside Composites* caught up with Paolo Zanzola, the company's Director of Industrial Specialities.

Inside Composites: How important is the sports equipment market to Hexcel these days? Isn't over 70% of your business now dedicated to aerospace?

Paolo Zanzola: Hexcel has been involved in the Winter Sports market and present at ISPO shows for many years. The main use for our products in this field is in skis. In fact, back in the 1970s, the company actually had its own brand of skis, based on prepreg and honeycomb core, before carbon fibre had really entered this market. I was recently lucky enough to be able to track down and buy a pair of these on eBay.



As Sales and Marketing Director for Hexcel's Industrial Specialities business, I'm responsible for everything that's not supplied to the aerospace, automotive or wind power industries, so as you can imagine, it's a pretty broad range of applications with a wide geographical base of customers, but Winter Sports is a very significant part of this.

IC: Is it different to the other markets Hexcel serves?

PZ: Winter Sports is a very demanding market in a number of ways and one that looks for regular and rapid innovation due to the regular change over of ski collections and technology and the constrained production times. This is compared to aerospace, where we will work on a new development over a longer time-span, and the interval from conception to qualification and then to acceptance on platforms can be between five-to-ten years.

But what all of the markets have in common is that our customers are looking to make their products lighter with the same performance properties, whatever the materials involved.

Hexcel's innovations in epoxy resins and carbon fabrics are really transforming such sports equipment, making everything lighter, stronger and more resistant.

IC: Is there much crossover between industries and hybridisation in what's being developed?



This same system was then adopted by other demanding application areas, for example automotive, where automation and high volume production is even more crucial. M77 is based on an epoxy resin system that press cures in just two minutes at 150°C, and is supplied as prepreg with either glass and carbon fibre. It's also available as HexMC-i, a high-performance carbon fibre compound developed specifically for compression moulding.

A number of leading ski manufacturers use HexPly M77 for the fast and efficient production of their products but there is always the demand for improving production cycle efficiency. On that basis, we are introducing our new HexPly M78.1 prepreg. HexPly M78.1 is available with carbon, glass or aramid fibre reinforcements and features a fast-curing hot melt epoxy resin matrix that cures in seven minutes at 120°C. The resin is a low tack system making the prepreg easy to handle, whilst adhering well to auxiliary and core materials including aluminium, wood, thermoplastics and elastomers. Customers are finding that this new system provides greater flexibility in ski manufacture, enhancing the process and the quality of the final product.

IC: Has the integration into the group of Formax – now Hexcel Reinforcements UK Ltd – also had an impact on what you can supply to the sporting goods manufacturers?

PZ: Most definitely. Part of our strength in this field is our vertical integration – from the fibres, to the fabric, to the prepreg and to completely integrated systems and we are now able to demonstrate new capabilities in multiaxials and the way we can specifically structure and design fabrics. We now market multiaxial fabrics as the HiMax brand.



We also market woven reinforcements and our PrimeTex woven fabrics, that are manufactured in our Les Avenieres site in France are made from carbon fibre that's spread in both warp and weft directions to provide a highly uniform weave and a gap-free finish. The spreading process can increase the closure factor by 5-8% compared to conventional weaving processes. The fabrics can lower the mass in a composite structure, resulting in even greater weight savings than with standard weave carbon fabrics.

IC: What's the new PrimeTex VLW?

PZ: We believe it's the lightest 3K gap-free carbon fabric ever produced. At 98gsm it breaks through the conventional limits for fibre areal weight and opens the door to the cost-effective use of very light plies in composite lay-ups. In fact, it's 12% thinner than conventional 1K carbon fabrics, resulting in lighter structures and making it the perfect candidate for surface plies, sandwich constructions, structural parts or any other composite components.