Press Release

Kapsch and Fipofix present a new technology for the fixation of high-performance fiber

Vienna, May 24, 2013 – Kapsch is investing in the development of a new fixation process for high-performance fibre for the production of semi-finished goods and fabrics for composite materials. The new Fipofix process allows the gentle processing of fibre rovings and was developed specially for the processing of mineral volcanic fibres, although it can also be used with other fibre types. Kapsch currently holds 80% of Fipofix GmbH, a company which was founded in cooperation with Yacht Construction Consulting. The project management and development of the process are in the hands of extreme sailor Norbert Sedlacek. To prove the quality of the fixation process and the material, Norbert Sedlacek will undertake a double Atlantic crossing from Les Sable d'Olonne to New York and back in a prototype racing yacht just 5 m long.

"Kapsch has fundamentally influenced the technological development in its industries with innovations from the very start, and innovation continues to play an important role in our company," says Kari Kapsch, Chief Operating Officer of the Kapsch Group, explaining the company's involvement. "Strategic partnerships are important in our approach to innovation. The longstanding and successful collaboration with Norbert Sedlacek has now given us the opportunity to evaluate an entirely new field of business and technology." Kapsch is supporting the development and automation of the process as well as the Atlantic crossing to proof the capability of the new technology with an investment of roughly one million euros in the first phase. The patent holder for the Fipofix process is Kapsch. The first application after refining and automating the process should be the construction of nautical sports equipment and boats. An expansion into other markets is possible in the future.

Fibre position fixation – Fipofix – Fixing fibre without loss of performance

The Fipofix® process enables the especially gentle fixation of all kinds of high-performance fibres. Positioning fibres without damaging them represents the greatest challenge in the manufacturing of composite materials. Up to 40% of the filaments of a roving are damaged in previous processing methods such as weaving, stapling and sewing, which results in decreased performance of the product under compressive and tensile loads. Fipofix® bonds the positioned fibres to the respective matrix for the final processing of the fabric without using foreign materials for fixation, such as yarns, clamps or other adhesives that additionally weaken the part. "We developed the process especially for the new ASA.TEC volcanic fibre since we see great potential for this material in the nautical area in particular," says Norbert Sedlacek. "In principle, however, the process is suitable for every type of fibre – we can adjust the fibre and adhesive precisely for any application."

“Proof of principle” – With a roughly 5 m long racing yacht across the Atlantic

The combination of Fipofix fabric technology and ASA.TEC volcanic fibres gives rise to a new generation of composite materials for high-performance applications. Developer and offshore sailor Norbert Sedlacek will prove the effectiveness of the technology with a double record trip across the Atlantic in a racing yacht only 4.94 m long – the Open16 Fipofix. The design and construction of the boat took place using the experience of Yacht Construction Consulting. The Open16 Fipofix was developed based on the racing yacht class Open 60 and built from Fipofix fabrics of ASA.TEC fibres using a sandwich process over a core of balsa wood. The material properties of the mineral volcanic fibres – acid, temperature and UV resistance as well as 100% recyclability – make them ideal for use in the nautical area. The “proof of principle” project will start in November 2013 in Les Sable d’Olonne and continue non-stop across the Atlantic to New York without outside help. The second part of the route will run in early summer of 2014 across the North Atlantic and along the limit of the drift ice back to Les Sable d’Olonne.

Record trip from continent to continent

The total distance of the trip will encompass roughly 8,000 nm; the total time at sea will be between 80 and 100 days. The “proof of principle” project is the world’s first attempt to cross the North Atlantic non-stop in a small sailboat just 16 feet long and to cross in both directions by single-handed sailing. The expected conditions on both routes will place extreme challenges on Norbert Sedlacek and on the material. “A complete season in the Atlantic with a double crossing will strain the boat in just a few months as heavily as ten years of normal use. This is the perfect way to prove the performance of the process and material,” remarks Norbert Sedlacek on the concept. “For me personally, this record trip with the magnificent, small boat represents the ultimate challenge for man and machine.”

Kapsch is one of the most successful technology companies in Austria, with global importance in the future markets of Intelligent Transportation Systems (ITS), Railway and Public Operator Telecommunications as well as Information and Communication Technology (ICT). The three core companies Kapsch TrafficCom, Kapsch CarrierCom and Kapsch BusinessCom belong to the Kapsch Group. As a family company with headquarters in Vienna, Kapsch has stood for the consistent development and implementation of new technologies to the benefit of its customers for more than 100 years. With a variety of innovative solutions and services, Kapsch makes an important contribution to the responsible shaping of a mobile and networked world. The companies of the Kapsch Group employ around 5,000 people in their worldwide branch offices and representative offices.
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