



PRESS RELEASE

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Mikrosam DOO

Krusevski pat bb

7500, Prilep, Macedonia

Phone: +389 (0)48 400 100

Email: info@mikrosam.com

Mikrosam signs contract to supply GKN Fokker with AFP, consolidation and slitting equipment for advanced thermoplastic manufacturing

Prilep, Macedonia, 3rd December 2019 – GKN Fokker has selected Mikrosam to deliver advanced equipment for development of aircraft parts with thermoplastic composites (TPC). This suite includes Mikrosam’s latest Automated Fiber Placement (AFP) machine, slitting equipment for thermoplastic prepregs and a custom-engineered thermoplastic consolidating machine. When installed, this equipment will add to GKN Fokker’s advanced manufacturing and R&D capabilities to produce complex 3D parts for the aviation industry.

Mikrosam offers one of the most cost-competitive and proven AFP solutions for thermoplastic composites with many advancements for maximum productivity. Designed as an integrated, modular, and upgradeable AFP work-cell, the 8-axis robotic AFP machine is capable of automated and precise placement of thermoplastic fibers. The system uses a multi-material AFP head with bi-directional placement on open and closed 3D shapes and mandrel surfaces. Combined with an automatic head exchange system, customers can obtain new multi-tow AFP or ATL heads or additional equipment for future use on the same work cell. Mikrosam’s AFP heads are also designed with flexibility and time-saving features, such as easy access to material spools, and quick servicing of consumable and spare parts with minimized downtimes. This ensures customers with high reliability, productivity and flexibility in advanced composites manufacturing.

Using thermoplastics – the next generation of composite materials – is becoming a priority in the aerospace industry for increasing production rates. Using a laser heating source, precise temperature and angle control, and a closed-loop process, Mikrosam’s AFP machines have proven results for in-situ consolidation of TPCs with better mechanical properties. Mikrosam’s extensive research and experience in development programs with many aerospace and automotive customers provides a fast-track to production with thermoplastic composites which are recyclable and more environmentally friendly.

“Today the market demands better automated thermoplastics layup and higher utilization of AFP machines. Our modular, upgradeable AFP systems give customers higher ROI with the ability to use multiple AFP or ATL heads on the same configuration. Customers can reduce cycle-times for parts and increase utilization of the AFP work-cell. When combined with our sophisticated control for in-situ consolidation of thermoplastic composites, our AFP machines provide excellent solutions for many industries.” – stated Dimitar Bogdanoski, Sales Manager at Mikrosam DOO.



The multi-material AFP Robot machine performing placement of thermoplastic prepreg

To complement the AFP system, GKN Fokker will receive equipment for wide and narrow prepreg tape slitting and rewinding to prepare spools. The slitting and rewinding machine works with thermoplastic prepregs to produce spools of various sizes and re-winding styles, e.g. from 300mm wide tape down to ¼" tapes used in AFP. This equipment is a cost-effective solution for integrating prepreg into narrow tape production and AFP process. Additionally, Mikrosam will deliver a custom-engineered consolidation press for advanced products made of thermoplastic composites. The complete automation of the AFP machine is powered by MikroPlace – a CATIA-compatible solution for analysis and simulation of composite parts – and QCS (Quality Control System) which offers continuous improvement via data monitoring and traceability.

This contract allows GKN Fokker to continue its advances in utilizing thermoplastics composites for aviation and presents a strong vote of confidence in Mikrosam's capabilities in equipment for thermoplastic composites.

"We are pleased by Mikrosam's professionalism and innovative drive, as well as the quality of the machines."
– stated Arnt Offringa, Thermoplastic Composites Technology Manager, GKN Aerospace.

About Mikrosam

Mikrosam DOO, based in Prilep, Macedonia, is a globally recognized leader in machines and know-how for the composites industry. It has installed more than 250 composites production lines at some of the most demanding customers in over 40 countries, including Germany, Sweden, USA, Japan, Russia, China, India, Korea. All machines are engineered-to-order using unique knowledge from proven solutions in: 6-axis filament winding, AFP/ATL robotic and gantry machines, automated production of CNG/H₂/LPG tanks, prepreg production & conversion. Integrated with its own state-of-the-art software for simulation and process automation, Mikrosam provides factory-automation for modern composites manufacturing. In our R&D center, we offer prototyping, testing, product design and technology development. Join our growing customer success list.