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## **Press release**

### **Minimal surface weight: Successful Prepreg tests by Roth Composite Machinery**

**Steffenberg. Roth Composite Machinery located in Steffenberg offers a laboratory for carrying out preliminary tests and process development as regards the manufacture of prepreg and organic sheets. Since the commissioning in 2017 customers have made use of the laboratory plant for production tests successfully. During current trials, Roth Composite Machinery has produced Lightweight Prepregs (particularly light semi-finished fibre composite materials) having a fibre surface weight of 75 g/m<sup>2</sup>.**

Such semi-finished fibre composite materials with pre-impregnated, partly cured or thermoplastic matrices can be processed to finished products in later working steps. For the current test at a process speed of 15 m/min, Roth Composite Machinery used 12 K carbon fibres having a fineness of 800 tex. As matrix material, "hot-melt epoxy" has been used and prepregs

with a resin surface weight of 25 g/m<sup>2</sup> and a width of 255 mm have been produced. The Laboratory Line currently offers a fibre spreading unit with a working width of up to 600 mm.

### **Numerous application areas**

Prepregs of this kind are used in most diverse industries. The company from Steffenberg develops machines for the manufacture of prepregs according to individual customer requirements. They are suitable for applications in the sports and leisure industries, the aerospace sector, the automotive industry, the ship and boat building area, in the building and bridge construction or in airplane structures. The know-how of Roth Composite Machinery is based on its experience of more than 50 years in the manufacture of Prepreg Plants. The manufacturer invested roughly one million Euro in this laboratory line.

### **Variable testing possibilities**

In consultation with Roth Composite Machinery, business partners and raw material producers have the possibility to carry out optimization or processing tests as to their current matrix systems or regarding new systems, fibres and fabrics without having to interrupt their own production processes for that. The Prepreg Laboratory Line of Roth Composite Machinery can process duromers as well as thermoplastic matrix systems up to 400 °C. The Roth process using the Rothabow technique is based on the calendaring technology by using two calenders. Trials with thermoplastic matrix materials but also with duromers with layings or fabrics of all kinds of fibre systems, such as carbon, glass or Aramid are possible. The company

is able to produce multilayer composite materials made of fabrics, fibres and films by using the laboratory line. A powder dosing unit for the processing of powder or granulate instead of a foil can be integrated. As application systems for the matrix, Roth provides the comma blade or the Foulard method for selection. Furthermore, the modular construction and the movable application unit enable the use of alternative, customer-specific application systems. The plant of Roth offers a spool creel with 80 spool positions, eight unwinders, three rewinders as well as a special fibre spreading unit. The modular construction and the open design offer an excellent operability. Measuring systems, for example for coating thickness measurements or surface inspections, can easily be integrated. Depending on the layers and the characteristics of the fibre materials, prepregs in all conceivable thicknesses can be manufactured.

#### **Test runs for coating and laminating processes**

Due to the configuration and modular construction of the laboratory line, test runs for coating and laminating processes are also possible. Roth Composite Machinery offers direct and indirect coating methods by means of comma blades, impregnations by using the Foulard system and squeezing rollers as well as multilayer laminations with pre-tempering systems via surface heating or infrared radiation.



**Image capture for files**

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**RCM\_Laboranlage\_0149.jpg**

Customers and raw material producers have versatile application possibilities by using the laboratory line of Roth Composite Machinery.

### **About Roth Composite Machinery**

Roth Composite Machinery is an expert in the field of special machinery construction – the company develops, designs and builds components, machines as well as complete production lines in the business areas

- Filament Winding & Prepreg
- Pleating & Coating
- Brushes & Brooms

### **About Roth Industries**

Roth Industries GmbH & Co. KG comprising various firms and around 1,300 employees all over the world is one of the most innovative companies in the areas

- Building Solutions - Divisions: Energy Systems, Sanitary Systems, Environmental Systems
- Industrial Solutions – Divisions: Composite Technology, Plastic Technology, Hydraulic Technology

The head office of the medium-sized traditional company is located in Dautphetal, Hesse. While the company's strategic direction, the controlling, auditing as well as the balance and financial planning is effected from there, the local employees are responsible for the development, production and marketing of the products.

28 production and sales companies of Roth Industries are acting all over the world - in core segments as world market leader.

Roth Industries bundles all activities of the companies belonging to the group in Germany and abroad. The company is owned by the Roth family to 100 %.

**Competence in**  
● energy ● water ● plastics

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