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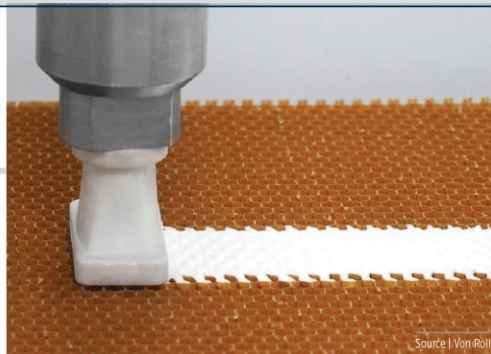
New Products

» CORE MATERIALS

Core filler for aircraft interiors promises less weight, lower costs

Von Roll's (Breitenbach, Switzerland) NEXT GEN core filler is designed to maximize local stiffness and increase strength of honeycomb core in composite sandwich panels while saving weight. According to Von Roll's internal testing, NEXT GEN core filler's most important advantages are its long pot and storage life at ambient conditions, and its precise dosability, which the company says makes this product particularly suitable for automated honeycomb potting in aircraft interior applications and other industries.

According to Von Roll, application of filler compounds can be one of the most time-consuming parts of manual sandwich structure construction. The automation of this process can cut production costs by more than 30%, not only by reducing the manual labor hours, but also by reducing material scrap rates while increasing quality and repeatability. The velocity of the robot tool during dispensing of the potting material is limited by the maximum extrusion rate, so a material providing a higher



Source | Von Roll

extrusion rate than state-of-art potting resins allows for higher production throughput.

The NEXT GEN core filler can either be dosed and inserted into the honeycomb core manually with a spatula or by using high-precision automation with a robot-based metering system. Von Roll says that pairing NEXT GEN core filler with automated potting can result in up to 20% material savings. The company also claims the filler can lead to cost reductions through higher accuracy and repeatability of the potting, which reduces material waste, manual labor in the manufacturing process and non-conformities.

The core filler promises extremely low viscosity, leading to precise, homogenous and reliable filling for honeycomb cells as small as

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3 mm. Von Roll also says the low viscosity results in high extrusion rates when using robots in an automated application process, enabling users to process more material in less time in a faster production process compared to traditional materials. In addition, fillings in circles, angular shapes or honeycomb form are possible for local reinforcements.

Von Roll says its fillers exclude smell- and volatilization-causing anhydrides, halogens and solvents. Unlike other fillers that consist of two components that need to be mixed before use, NEXT GEN core filler comes in a single component ready for use.

The product's density of 0.7 g/cm³ or less is reported to offer significant weight reduction benefits. With standard curing temperatures of between 125 and 150°C (257 and 302°F), the NEXT GEN core filler is said to be compatible with all kinds of curing processes and cycle times of common prepreps for the aircraft interior industry. Furthermore, it is reportedly easy to handle and can be stored for up to 5 weeks at room temperature, even in contact with humidity. In addition, the core filler's expansion coefficient is near zero under the influence of heat or load.

In addition, NEXT GEN core filler is compatible with phenolics and epoxies. For example, it is compatible with a new class of Von Roll's FST-compliant prepreps belonging to the EP200 family, which are said to provide the highest mechanical properties and surfacing quality on standard honeycomb cores and can be processed together with the core filler on any kind of honeycomb support.

Two variants of the NEXT GEN core filler are currently available: EP401 and EP411, to offer to the market solutions which are compatible with or without the use of a dedicated press. vonroll.com

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