Press Release

Fast cars, lightweight material

JEC World 2016: RAMPF Tooling Solutions showcases top-class board, paste, and liquid materials for the composites industry

Grafenberg, February 15, 2016. With outstanding physical and mechanical properties as well as an excellent price-performance ratio, the RAKU-TOOL® brand of board materials, Close Contour Castings, Close Contour Pastes, and liquid systems from RAMPF Tooling Solutions provides materials for high-quality, fast lightweight construction using composites.

The RAMPF Tooling Solutions stand at this year's JEC World, the international trade show for composite materials in Paris from March 8 - 10, 2016 – **Hall 6, Stand Q32-2** – is all about fast cars and lightweight materials. RAKU-TOOL® products were used both in the construction of a GT3 racing car for the ADAC GT Masters and for a formula racing car for the GP3 series. The materials made it possible to manufacture high-quality composite parts fast and cost-effectively.

RAKU-TOOL® WB-0691, WB-0700, and WB-1404 for the Callaway Corvette C7 GT3-R

RAKU-TOOL® board materials were used to create various molds to produce lightweight parts for the C7 GT3-R racing car from Callaway Competition, the longest-serving team in the ADAC GT Masters racing series.

RAKU-TOOL® WB-0691 and RAKU-TOOL® WB-0700 are particularly suited for lay-up tools, vacuum forming molds, and for processing prepregs. RAKU-TOOL® WB-1404 molds were used to manufacture carbon fiber parts with EI-2500 / EH-2970 resin infusion. The benefits this provides are an outstanding surface of the resin-infusion parts, excellent fit accuracies, and no damage to the molds during demolding.

The RAKU-TOOL® WB-0700 working board material was used, among other things, in the manufacture of the center console of the Callaway Competition C7 GT3-R racing car.

Production of seamless master models for prepreg lay-up tools with RAKU-TOOL® CC/CB-6503

For the main monocoque body of the GP3/16 racing car from Italian chassis manufacturer Dallara Automobili, RAKU-TOOL® Close Contour Casting CC/CB-6503 was used for the production of master models for prepreg lay-up tools. RAKU-TOOL® CC/CB-6503 has a dense, fine and seamless surface, as well as good dimensional stability. The models were used to produce lay-up tools with low temperature prepregs in the autoclave. The autoclave process allows for very high mechanical properties and a very high quality of the finished parts. A further advantage: RAKU-TOOL® CC/CB-6503 is delivered as a three dimensional casting, which is already a close contour shape of the customer's final model and therefore easy and quick to machine with little waste.

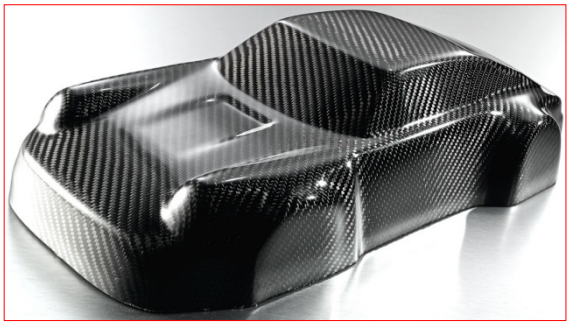
Direct production of prepreg lay-up tools with RAKU-TOOL® CP-6131

The nose of the GP3/16 racing car was produced using RAKU-TOOL® Close Contour Paste CP-6131 for medium temperature prepreg lay-up tools. RAKU-TOOL® CP-6131 is easy to process and apply. The quick and even heat distribution within the shell tool guarantees fast autoclave cycle times. The production process is very fast and efficient – direct tooling does not require the production of a model, and the close contour shape facilitates faster milling times. Furthermore, as with all close contour products, less material is used and thus less waste produced.

Economic production of large models and molds with RAKU-TOOL® CP-6060

RAKU-TOOL® CP-6060 Close Contour Paste was developed especially for the production of large models and molds. The paste was, for example, used for the production of a wind turbine blade model (see picture) to manufacture wind turbine blades using the composite construction method. The material is especially suited for the production of large models and molds in the wind energy, marine, and automotive industry. RAKU-TOOL® CP-6060 is easy to process and apply, even on vertical surfaces without slump. It can be processed after just 24 hours of curing at RT.

RAKU-TOOL® Liquid Systems for the production of a carbon model of a sports car



RAMPF Tooling Solutions has an excellent product portfolio of liquid products which offers several different solutions and processes to produce excellent products. For the production of a carbon model of a sports car, various epoxy systems for three different composite construction methods can be used.

1) Resin infusion shell lay-up tool, produced using resin infusion

Surface: RAKU-TOOL® gelcoat EG-2105 / EH-2950

Backing: RAKU-TOOL® resin infusion EI-2500 / EH-2970-1 / carbon fibers

Produced part: carbon fiber with RAKU-TOOL® EI-2500 / EH-2970-1

2) Prepreg shell lay-up tool, produced in resin infusion

Surface: RAKU-TOOL® gelcoat EG-2107 / EH-2951

Backing: RAKU-TOOL® resin infusion EI-2504 / EH-2974 / carbon fiber

Produced part: prepreg

3) RTM tool (punch/ die), produced using lay-up technique

Surface: RAKU-TOOL® gelcoat EG-2107 / EH-2951

Back filling: RAKU-TOOL® casting system EC-2461 / EH-2961 / AC-9061

Produced part: carbon fiber with RAKU-TOOL® EI-2500 / EH-2972

Visit RAMPF Tooling Solutions at JEC World 2016 – Hall 6, Stand Q32-2

www.rampf-gruppe.de/en/

RAMPF Tooling Solutions GmbH & Co. KG develops and produces board and liquid materials and semi-finished goods for cutting-edge modeling and mold engineering. The range of skills includes made-to-measure services and products such as pastes, large-volume and full-size castings for Close Contour models, and prototyping systems.

Based in Grafenberg (near Stuttgart), Germany, RAMPF Tooling Solutions is the world's largest producer of styling, modeling, and working board materials, which demonstrate excellent quality and the best mechanical properties.

High-quality Close Contour Pastes, Close Contour Blocks, and Close Contour Castings guarantee excellent and cost-effective solutions for modeling and mold engineering.

The company produces and develops pioneering systems for the composites industry that cover a wide variety of production procedures and a broad range of temperatures.

It goes without saying that RAMPF Tooling Solutions also provides expert advice, customer-specific service, and prompt technical support.

RAMPF Tooling Solutions is a company of the international **RAMPF Group** based in Grafenberg, Germany.

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