

RAMPF | Tooling Solutions



Innovative solutions for model, mold, and tool making

RAMPF Group

The international RAMPF Group stands for **engineering and chemical solutions** and caters to the economic and ecological needs of industry.

Our range of competencies includes:

- > Production and recycling of **materials** for modeling, lightweight construction, bonding, and protection
- > **Technical production systems** for precise, dynamic positioning and automation, as well as technologies for complex composite parts production
- > **A comprehensive range of solutions and services**, particularly for innovative and customer-specific requirements

This know-how helps our customers achieve profitable and sustainable growth.

Trusting relationships are of utmost importance to RAMPF. They are a vital part of the family-owned company's success story which now spans over 35 years.

RAMPF thinks globally and acts locally. The company has production facilities strategically located in Germany, the United States, Canada, China, and Japan.

RAMPF Tooling Solutions

The company based in Grafenberg (near Stuttgart), Germany, is the world's largest producer of high-performance, high-quality styling, modeling, and working board materials.

Services and products such as Close Contour Pastes, Close Contour Casting, including large-volume casting, 1:1 casting, and Close Contour Blocks ensure the manufacture of outstanding Close Contour models and molds.

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

The very latest production processes and facilities, combined with expert advice and customer-specific service, ensure that our products are manufactured cost effectively and environmentally friendly, and conform to the highest quality standard – worldwide.



Machine Systems



Production Systems



Composite Solutions



Eco Solutions



Polymer Solutions



Tooling Solutions

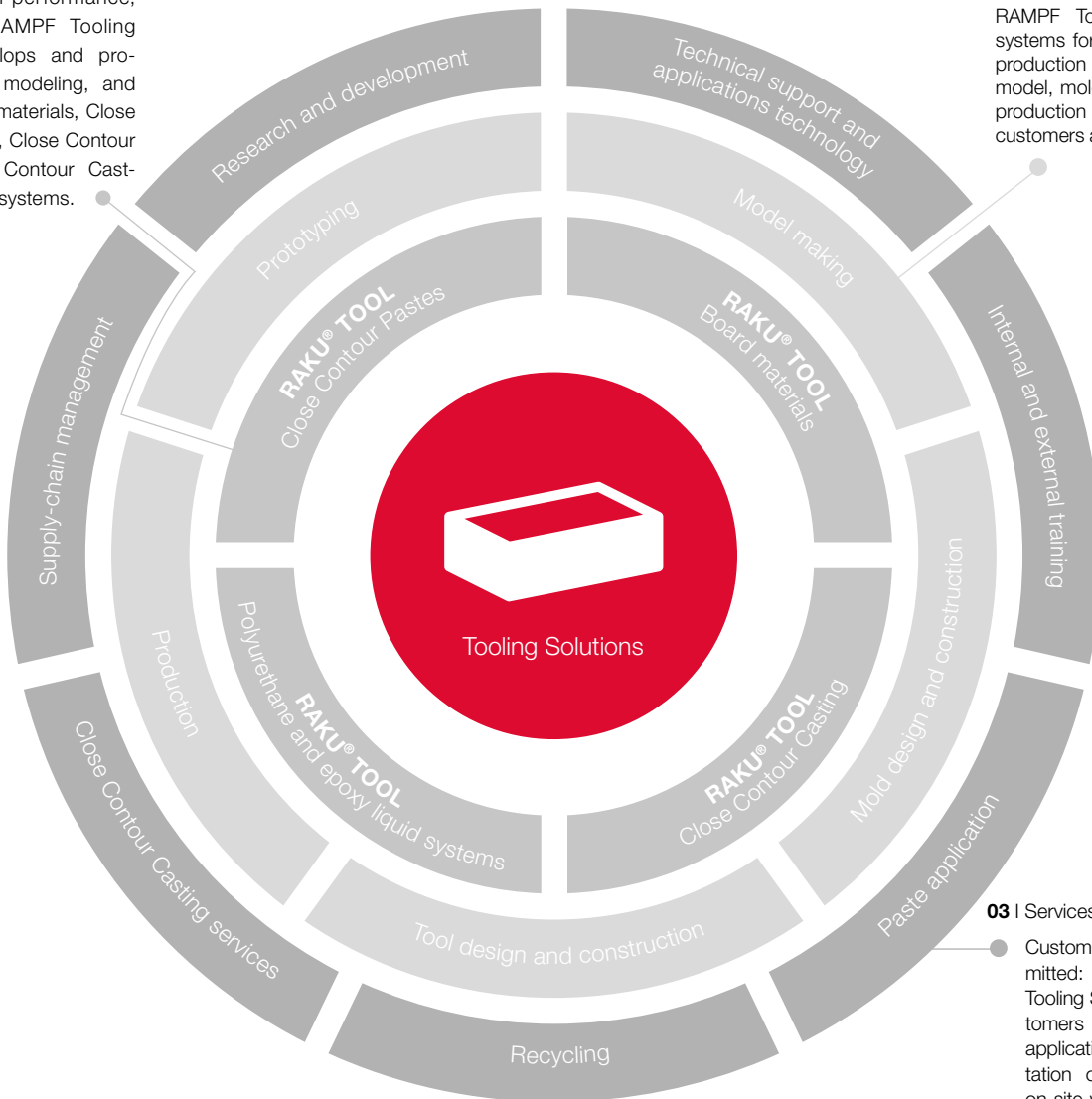
Range of products and services

01 | Materials

Creative, high-performance, sustainable: RAMPF Tooling Solutions develops and produces styling, modeling, and working board materials, Close Contour Pastes, Close Contour Blocks, Close Contour Castings, and liquid systems.

02 | Production systems

Customized, high-tech, professional: RAMPF Tooling Solutions develops systems for use throughout the entire production chain – from prototyping, model, mold, and tool construction to production – for existing and future customers and market requirements.



03 | Services

Customer-oriented, skilled, committed: The experts from RAMPF Tooling Solutions support their customers in technology and product applications, and in the implementation of their ideas – including on-site when necessary. They also offer training courses in which the products and solutions are presented using practical demonstrations.

» We provide our customers and partners with customized tooling solutions for cost-effective and high-quality model, mold, and tool construction. We work with them to develop creative, customized solutions adapted to their specific needs. Expert advice, customer-specific service, and rapid technical support are all standard at RAMPF. «

01
Materials



RAKU® TOOL | Board materials

We find solutions for your applications

For more than 35 years RAMPF Tooling has been producing board materials. We are the market leader with the world's largest production of styling, modeling, and working boards.

- > **High-performance range of standard products** which can be adapted to meet changing market needs.
- > **Complete package solution** comprising boards, matching adhesives, and repair pastes.



Your benefits

- > Quick and individual modification and customization of existing products
- > Comprehensive technical support
- > "Made in Germany"
- > High quality and stringent quality control

Area	Key Applications	Key Properties	Density g/cm ³		
			0.06–0.49	0.5–1.0	1.1–1.7
Styling Design	<ul style="list-style-type: none"> > Program proving > Supporting structures > Design studies > Negative molds 	<ul style="list-style-type: none"> > Fine surface > Easy to process > Dimensionally stable 	●		
Modelling	<ul style="list-style-type: none"> > Cubing > Show cars > Data control models > Functional Cubing > Lay-up tools > Jigs & Fixtures 	<ul style="list-style-type: none"> > Very fine surface > Easy to machine > Dimensionally stable > Eco-friendly 		●	
Prototyping / Small series	<ul style="list-style-type: none"> > Hammer forms > Lay-up tools > Rapid prototyping casting molds > Flanging tools > Welding fixtures 	<ul style="list-style-type: none"> > Good mechanical properties > Easy to machine > Impact and edge strength 			●
Foundry	<ul style="list-style-type: none"> > Pattern plates > Core boxes > Models > Negatives > Auxiliary tools 	<ul style="list-style-type: none"> > Excellent abrasion resistance > Good temperature resistance > Low thermal expansion > Eco-friendly and sustainable 		●	●
Ceramics	<ul style="list-style-type: none"> > Models > Appliance and working models > Negatives > Auxiliary tools 	<ul style="list-style-type: none"> > Excellent surface > Excellent styrene resistance 		●	●
Composites	<ul style="list-style-type: none"> > Models > Lay-up molds > Prepreg lay-up tools 	<ul style="list-style-type: none"> > Good impact strength > Chemical resistant > Can be polished to a high gloss (1.1–1.7 Density) 	●	●	●

01

Materials



RAKU® TOOL | Close Contour products

Every job is different. So are our solutions.

Close Contour Pastes, Close Contour Blocks, and Close Contour Castings are high-performance products and the result of targeted development work and years of practical experience. We tailor our Close Contour products to your specific requirements quickly – and effectively.

Close Contour Pastes

The paste is applied to a close contour shape supporting structure, cured and then machined according to CAD data. RAMPF Tooling Solutions also offers a Close Contour Paste application service.

Close Contour Blocks

Special blocks are produced in well-known board quality according to customer specifications (L x W x H) and supplied as customized, rectangular, unmachined blocks.

Close Contour Castings

Close Contour Castings are supplied as a three-dimensional shape which is already a close contour of the final shape. The production process takes place in-house at RAMPF Tooling Solutions. A light close contour mold (e.g. EPS or RAKU® TOOL SB-0080) is machined using the area-based data supplied by the customer. A release agent is applied and the mold filled using a special casting process. Demolding and post curing of the casting is next, followed by machining. Very close co-operation between the customer and RAMPF is essential during this process.



Your benefits

- > Close Contour shape
- > Rapid milling
- > Little waste
- > Seamless, fine surface



01
Materials

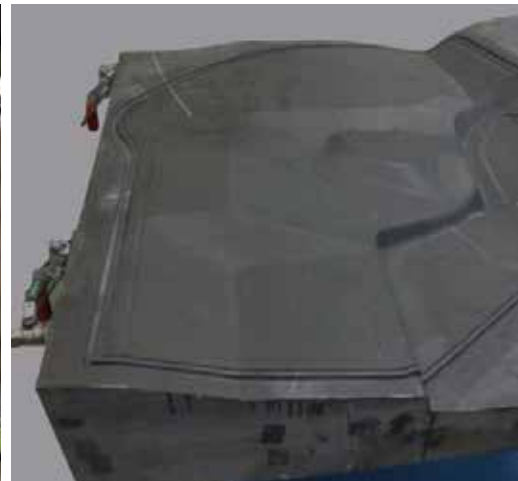
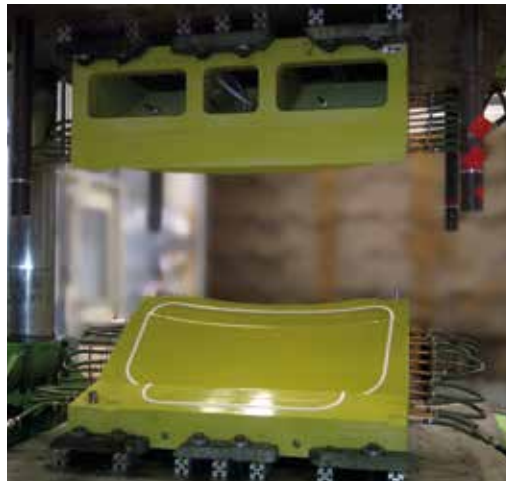


RAKU[®] TOOL | Close Contour products

at a glance

	Close Contour Pastes	Close Contour Blocks	Close Contour Castings
Key Applications			
Design and styling	●		
Master models, cubing models	●	●	●
Molds	●	●	●
Jigs and Fixtures	●	●	●
Tools	●	●	●
Foundry patterns		●	●
Qualitative selection criteria			
Size of the models/tools	Medium to very large*	Small to medium	Medium to large*
Mechanical properties dependent on product	See data sheet	See data sheet	See data sheet
Economic selection criteria			
Marginal waste	●	●	●
Quick machining as close contour shape	●	●	●
Light, cost-effective supporting structures	●		
No handling of liquid products		●	●
Delivery time	Immediate	Approx. 5 days	Approx. 10 days
Equipment costs	●	None	None
Work hygiene/exposure	marginal	None	None
Specifics	Seamless surface	Seamless surface	Seamless surface

* With large models/molds build-up in segments possible



01

Applications



Further Information

Image 1: Interior cubing of passenger cabin:

Board material RAKU® TOOL MB-0720

Advantages:

- > Accurate, dimensionally stable
- > Finest details can be reproduced
- > 5.9 in and 7.9 in thicknesses
- > Adhesive's hardness and color matched to the board material

Image 2: Fixture

Board material RAKU® TOOL WB-1000

Advantages:

- > 75 % weight saving compared with metal
- > More cost-effective than metal
- > Easy processing and post-processing (ensuring separation of board material and emulsion)
- > Any required dimension can quickly be joined by bonding the board material. No welding or drilling required. The final properties remain the same.

Image 3: Design model

Board material RAKU® TOOL MB-0600

Advantages:

- > Excellent surface structure
- > Accurate, dimensionally stable
- > Finest details can be reproduced
- > Easily shaped and machined
- > Adhesive's hardness and color matched to the board material



Further Information

Image 4: Production of a UAV master model with RAKU® TOOL WB-1405

Advantages:

- > Good dimensional stability
- > Easy to machine
- > Excellent surface

Image 5: Production of a car model with RAKU® TOOL CP-6070/CP-6072

Advantages:

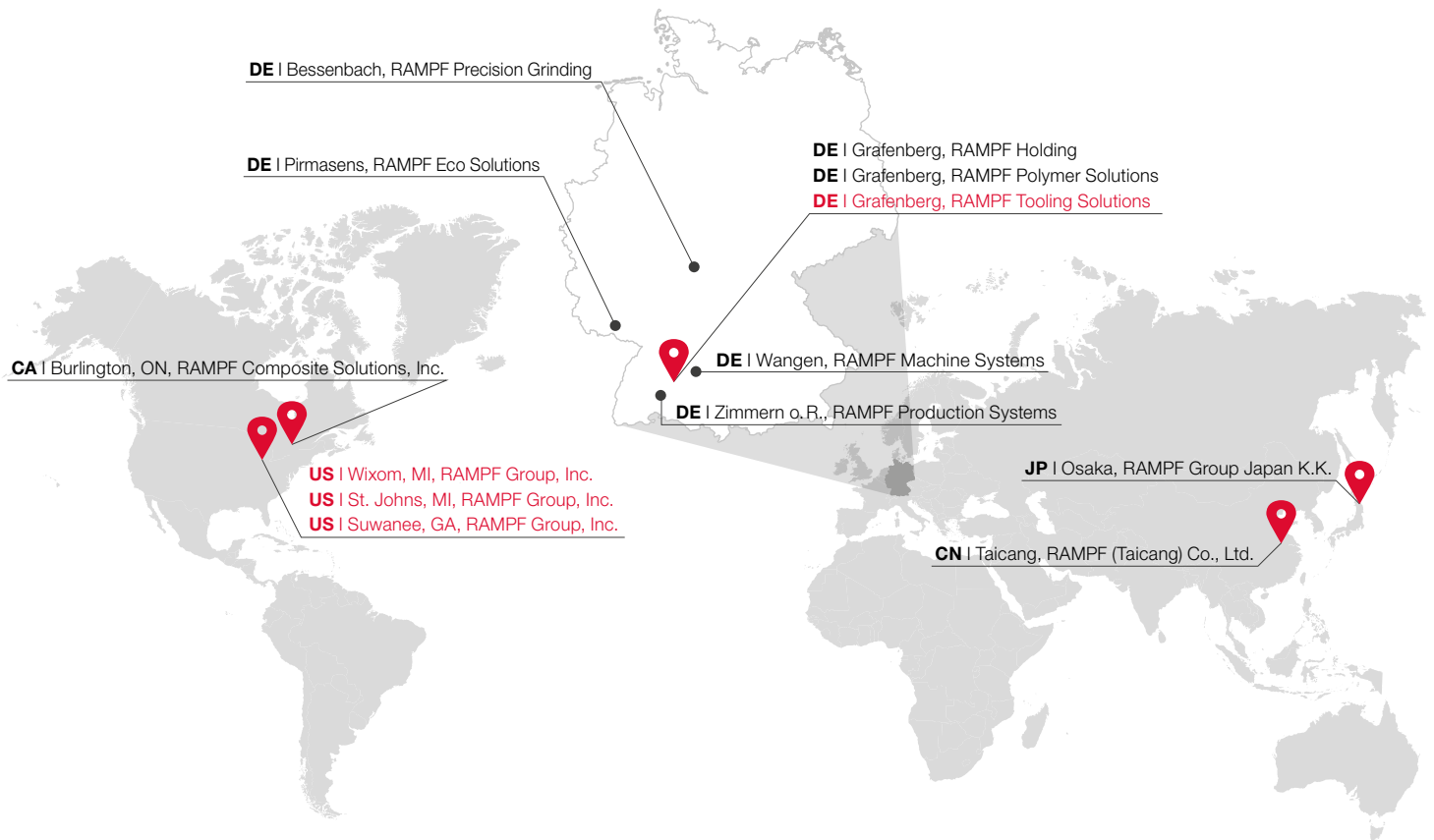
- > Little finishing required due to fine, seamless surface structure
- > Easy to machine
- > Good dimensional stability
- > Specially suitable for large model

Image 6: Production of a prepeg lay-up tool made with RAKU® TOOL CC-6503 for the manufacture of an airplane acoustic panel.

Advantages:

- > Excellent surface of prepeg lay-up tool
- > Temperature resistant up to 80 °C
- > Good dimensional stability
- > Compatible with all paints

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