

RAMPF starts mineral casting production in the US

Outstanding damping and thermal stability – Epoxy resin-bonded polymer concrete EPUMENT for machine beds outperforms steel and iron

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Wixom, MI, USA, November 05, 2018. RAMPF Group, Inc. has started the manufacture of EPUMENT mineral casting at its head office in Wixom, MI. The epoxy resin-bonded material boasts unbeatable static, dynamic, thermal, and acoustic properties and is used for the construction of ultra-precise machine beds and machine bed components in various industries, including electronics, medical equipment, semi-conductor, metrology, and packaging.

“When mineral casting technology was introduced in the early 1980s in Europe, it was way ahead of its time. But there have always been technologies and companies that are one step ahead – and in the end, these are always the most successful”, says Panos Angelopoulos, Division Manager at RAMPF Group, Inc.

He should know, being a true pioneer of mineral casting (polymer concrete) in the US and having worked in the industry for over 20 years. From the outset he recognized the enormous potential of the epoxy resin-bonded material for machine bed construction – “Disruptive technologies take time to penetrate the market. That explains why the majority of machine tool builders still construct their machine beds with steel or iron, despite the numerous advantages offered by this high-performance, vibration-damping material. But I strongly believe that this is set to change.”

Mineral casting technology set for breakthrough

Panos Angelopoulos, the founder of Cleveland Polymer Technologies, is now part of the RAMPF team and has set up a production facility for EPUMENT at the head office of RAMPF Group, Inc. in Wixom, MI. “I strongly believe that in this new constellation we can establish this first-class mineral casting material as the technology of the future in the NAFTA markets”, Panos Angelopoulos emphasizes.

Indeed, the prerequisites are promising for the mineral casting to make further inroads into the markets, as modern production technology must fulfil ever-increasing demands on dynamics, precision, and cost-effectiveness – “Due to its superior damping compared to metal materials, the dynamic stability of the machine bed structure is significantly improved when using EPUMENT mineral casting. And because of its high thermal inertia, the machines beds also offer much greater thermal stability – and all this while only weighing about a third of cast iron and still exhibiting an excellent mass/rigidity ratio.”

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Flawless ecological credentials

Furthermore, as the US is also becoming more environmentally conscious and responsive towards energy costs and various regulations, EPUMENT's flawless ecological credentials – resource-saving manufacture and environmentally sound disposal and recycling options – are becoming more relevant.

“As most of the steel and iron production has already moved from the US to countries like China, Korea, and South America, RAMPF is making a future-oriented investment by prioritizing mineral casting machine bed production in North America”, Panos Angelopoulos points out.



Left: EPUMENT mineral casting consists of specially-selected stones and minerals with high-quality binding agents based on epoxy resin. It is cold cast in molds made from wood, steel, or plastic. As a result, up to 30 percent less primary energy is used in its manufacture compared to other materials. Right: RAMPF Group, Inc. is an end-to-end development partner for system solutions made of mineral casting – from material-specific design and engineering to FEM modeling and the design of casting molds, replication gauges, and fixtures.



Exceptional dynamics from sustainable and environmentally friendly production – the machine bed of a high-speed milling machine made from RAMPF's EPUMENT mineral casting, with high-precision replicated surfaces manufactured using non-cutting processes for mounting guide rails, measuring systems, and drive components.

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RAMPF Group, Inc., based in Wixom, Michigan, is the North American subsidiary of the international RAMPF Group.

The product portfolio of RAMPF Group, Inc. is comprised of:

- > mixing and dispensing systems for the reliable processing of polymers
- > two-component polymer (or synthetic) systems based on polyurethane, epoxy, and silicone
- > modeling and mold engineering materials, in particular for the automotive, marine, and aviation industries
- > machine bases, machine frames, and other structural components made from mineral casting (polymer concrete)

The international RAMPF Group stands for engineering and chemical solutions and caters to the economic and ecological needs of industry. The Group secures its presence on the international markets with 800 employees and six core competencies:

- > **RAMPF Machine Systems** based in Wangen (Göppingen), Germany, develops and produces multi-axis positioning and moving systems, trunk machines, and basic machines based on high-precision machine beds and machine bed components made from alternative materials.
- > **RAMPF Production Systems** based in Zimmern o. R., Germany, develops and produces mixing and dispensing systems for bonding, sealing, foaming, and casting a wide variety of materials. The company also offers a wide range of automation skills relating to all aspects of process engineering.
- > **RAMPF Composite Solutions** based in Burlington, Ontario, Canada, is a holistic composites supplier to companies in the aerospace and medical industries. The company offers a complete suite of services including composite part design and engineering, metal-to-composite conversion engineering, and composite manufacturing to very tight tolerances.
- > **RAMPF Eco Solutions** based in Pirmasens, Germany, develops chemical solutions for the manufacture of high-quality alternative polyols from PU and PET waste materials. This expertise is also put to use in the planning and construction of customer-specific facilities for manufacturing polyols.
- > **RAMPF Polymer Solutions** based in Grafenberg, Germany, develops and produces reactive resin systems based on polyurethane, epoxy, and silicone. Its product portfolio includes liquid and thixotropic sealing systems, electro and engineering casting resins, edge and filter casting resins, and adhesives.
- > **RAMPF Tooling Solutions** based in Grafenberg, Germany, develops and produces board and liquid materials 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.

RAMPF has subsidiaries in Germany, the U.S., Canada, Japan, and China.

All RAMPF companies are united under a holding company – **RAMPF Holding GmbH & Co. KG** – based in Grafenberg, Germany.

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