

EPUMENT mineral casting takes center stage at SIMTOS 2018

MIKRO M.I. TECH presents epoxy resin-bonded material for machine beds and machine bed components at Seoul International Manufacturing Technology Show

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Wangen (near Göppingen), March 27, 2018. Epoxy resin-bonded mineral casting EPUMENT is taking center stage at SIMTOS 2018, the Seoul International Manufacturing Technology Show. RAMPF's Korean partner MIKRO M.I. TECH is presenting the material for the low-energy production of vibration-damping machine beds and machine bed components from April 3 - 7 at the Korea International Exhibition Center – Hall 10 / Booth G810.



Epoxy resin-bonded mineral casting EPUMENT is used for the construction of vibration-damping machine beds and machine bed components in highly dynamic mechanical engineering applications.

EPUMENT mineral casting, developed by German company RAMPF Machine Systems, consists of selected minerals and stones with high-quality epoxy resin-based binding agents. It is used for the construction of vibration-damping machine beds and machine bed components in highly dynamic mechanical engineering applications, amongst others in the semi-conductor, laser, medical, and packaging industries.

“From a materials point of view, the key advantage of mineral casting is the considerably enhanced damping, which ensures the machine bed structure has greater dynamic stability in ultrafast and high-precision production machinery”, explains Fabian Werner, Managing Director of RAMPF (Taicang), RAMPF's Chinese subsidiary.

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Comparative measurements of the logarithmic decrement as a damping parameter show that mineral casting has a material damping capacity that is eight to ten times greater than metal materials. Further benefits of EPUMENT mineral casting are:

- > low thermal conductivity, ensuring high thermal stability
- > high isotropy and homogeneity prevent load-related deformation of machine beds
- > high media resistance
- > unconventional bed and variant structures thanks to flexible modeling, non-cutting replication, and innovative bonding technology
- > lower machine cover/cladding costs thanks to the surface and design functionality

Economic and ecological benefits

EPUMENT mineral casting is also renowned for its resource-efficient manufacture and environmentally friendly disposal and recycling:

- > EPUMENT 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.
- > The high casting precision, combined with the highly accurate RAMPF in-house replication technology, saves the transportation to external processors that would otherwise be needed, and reduces / eliminates the use of processing machinery.
- > Over 90 percent of EPUMENT mineral casting consists of naturally occurring minerals and stones, and a binding agent based on epoxy resin. This high proportion of minerals and the environmentally friendly resin compound mean that the material can be disposed of in the same way as normal construction waste.
- > Reducing mineral casting components to chippings in large-scale shredder plants and separating out integrated metal components is tried and tested. Chippings from mineral casting can be used as recycled construction material in road building, industrial construction, landfill surface sealing, and creating green spaces.

EPUMENT is also safe for the effective antibacterial use in food-related areas such as the food and packaging industries. It is approved under the German Foodstuff and Consumer Goods Act (LMBG) and Consumer Goods Ordinance (89/109/EEC and 90/128/EEC) and the Code of Federal Regulations, Food and Drugs (FDA).

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“We look forward to showing visitors of SIMTOS 2018 how EPUMENT paves the way for machine beds and machine bed components with impressive properties, a wide variety of design options, and considerable economic benefits”, says G.M. Lee, Managing Director of MIKRO M.I. TECH.

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RAMPF Machine Systems GmbH & Co. KG, based in Wangen (near Göppingen), Germany, is the leading supplier and development partner for system solutions, trunk machines, and basic machines, as well as multi-axis positioning and moving systems based on high-precision machine beds and machine bed components made from alternative materials.

The portfolio of high-performance materials includes mineral casting, ultra-high performance concrete (UHPC), natural hard stone, metal foam, and fiber composites. These materials provide a solid basis for ultra-precise and high-performance machine beds and machine bed assemblies.

The full range of services provided by the company includes everything from engineering to production, as well as assembly, system solutions, customer-specific multi-axis positioning and moving systems, and basic machines – from single-piece to series production in customized supply chain solutions.

Using innovative casting, grinding, and lapping processes, as well as high-performance assembly and testing equipment in temperature-controlled production environments, exceptional accuracy of machine bases and basic machines is guaranteed.

RAMPF Machine Systems is a company of the international **RAMPF Group** based in Grafenberg, Germany.

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