

Highly Resilient Thanks to Fiber Reinforcement: igus develops High-Strength Filament for 3D Printing

igumid P190 can be used for multi-material printing as well as highly stable structural components

CONNECTICUT, UNITED STATES, August 3, 2022 /EINPresswire.com/ -- Motion plastics specialist igus has developed igumid® P190, a new filament for 3D printing that is highly rigid and durable thanks to its reinforced carbon fiber. The material is suitable for structural components and connecting elements for cable carriers, as well as for 2-component 3D printing in combination with iglide® i190. The new [igumid P190](#) can be purchased as filament for 3D printing or ordered in the igus online 3D printing service.

Since 2020 the plastics specialist igus has been offering 2-component 3D printing (2K), which makes it easy to combine different material properties. This is also the idea behind the new, fiber-reinforced filament igumid P190, which was specially developed as a material partner for the tribofilament [iglide i190](#). iglide i190 is characterized by its high wear resistance and excellent service life thanks to the solid lubricants incorporated in the material. Its abrasion resistance is up to 50 times better than regular 3D printing filaments.



With the high strength and rigid 3D printing filament igumid P190, highly stable structural and multi-material components can be constructed - light, lubricant- and corrosion-free. (Source: igus GmbH)

"With the help of multi-material printing, these two filaments can be combined in a single manufacturing step to create a highly stable and at the same time friction-optimized component," explains Tom Krause, head of additive manufacturing at igus.

The 2K printers work with the Fused Deposition Modeling (FDM) process. Both plastics are melted in separate pressure nozzles and are built-up layer by layer to form a workpiece.

"Both filaments together have an excellent material bond. This makes them ideal for multi-material printing," Tom Krause makes clear.

2K components are used in grippers, so they have a body that is resistant to bending and, at the same time, flexible gripping surfaces for a secure grip.

Stable, lightweight, proven

The filament has a low density of 1.25 g/cm³, while the material's high strength ensures lower material requirements. Thus, igumid P190 can also be used for lightweight construction. Due to its high strength and stiffness, igumid P190 is also suitable for producing highly durable structural components. Inhouse tests following DIN EN ISO 178 in igus' 3,800 square meter facility demonstrated that the filament has a flexural strength of up to 237 MPa and a flexural E-modulus of 11.5 GPa thanks to fiber reinforcement.

Learn more about igus 3D printing materials [here](#).

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ABOUT IGUS:

igus GmbH develops and produces motion plastics. These self-lubricating, high-performance polymers improve technology and reduce costs wherever things move. In energy supplies, highly flexible cables, plain and linear bearings, and lead screw technology made of tribo-polymers, igus is the worldwide market leader. The family-run company based in Cologne, Germany, is represented in 35 countries and employs 4,900 people across the globe. In 2021, igus generated a turnover of €961 million. Research in the industry's largest test laboratories constantly yields innovations and more user security. Two hundred thirty-four thousand articles are available from stock, and service life can be calculated online. In recent years, the company has expanded by creating internal startups, for example, ball bearings, robot drives, 3D printing, the RBTX platform for Lean Robotics, and intelligent "smart plastics" for Industry 4.0. Among the most important environmental investments are the "change" program – recycling of used e-chains and participating in an enterprise that produces oil from plastic waste.

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