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3D PRINTED BIKE TIRES ARE FLEXIBLE AND CUSTOMIZABLE

 MOBILITY & TRANSPORT

Flexible tires made from a thermoplastic elastomer can be 3D printed and customized for varying cycling needs.

BigRep, a Berlin based company that manufactures 3D printers, has created 3D printed airless bike tires. Using a thermoplastic elastomer, called Pro Flex Filament, the company were able to print tires with flexible properties. Its flexible properties make it compatible with the airless tires. Marco Mattia Cristofori, Product Designer at BigRep, explains “We were able to replace ‘air’ as a necessity in the tire by customizing the pattern to be one of a three-layered honeycomb design”. Cristofori also tested the tires on the streets of Berlin to assess their functionality.

In addition to its flexibility, Pro Flex Filament is a durable material and has high temperature resistance. As the tires are 3D printable, individuals can customize them for their specific needs. For example, customers can tailor the treads and internal patterns of the tires for road cycling or mountain biking. They can also design the tires to suit different weather conditions. Along with bicycle tires, Pro Flex Filament has potential to be usable in making sporting shoe shells, skateboard wheels, ski tips and ends. Pro Flex Filament works with the BigRep ONE Printer and is available to buy online. It is available for EUR 98.90 for a 2 kg spool.

Many innovations in the mobility and transportation sector seek to improve tires, making them smarter and more sustainable. One company uses coral as their inspiration to create **airless concept tires** that are biodegradable and can be 3D printed. Another company creates **smart concept tires** using living moss to reduce air pollution. As well as enabling innovation in mobility, what other useful applications are there for 3D printing flexible materials?

21st May 2018

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