

Product Name

Aenimal Bhulk

Designer

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for possible exposition in April

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Description of innovation social values

- product category
- formal and functional features
- problems solved by innovation
 - user
 - field of application

The main target behind the AENIMAL project is to obtain ecological, environmentally sustainable bikes. A feasibility analysis was conducted to determine the most correct 3D printing processes and material. The result is the use of FDM technology combined with biodegradable, recycled and recyclable PLA biopolymers derived from renewable resources such as corn starch or sugarcane.

Measuring the impacts of the non-renewable energy use and comparing data between PLA and traditional polymers (like PET & PS), provides a good insight into how it performs. In the chart below, the latest PLA data is compared with the most recent industry data for European & American products as published by PlasticsEurope and APC respectively. As showed in the chart, the production of PLA is the most ecological process. Also, power consumption for 3D printing a frame is 56kWh and the energy we use is sourced from solar panels.

Future prospects are bright for 3D printing: technology is becoming more and more affordable and sustainable, materials less expensive and technologically more advanced. The 3D printing process is easily repeatable and stable so it will become easily industrialized, production series will also be possible with a low investment.

Description of technical features

- operations
- technology

“BHULK” is a special MTB frame made with eco-compatible material using FDM (Fused Deposition Modeling) 3D printing. This particular 3D printing process consists in a fused filament deposition by a special CNC machine, able to make very complex objects without shape limits that are typical of the standard moulding process.

The knowledge and experience of the Eurocompositi team have been fundamental to design the right tube shapes and dimensions, in order to maintain a certain stiffness and durability with a material that surely doesn't have the mechanical characteristics of the most advanced composite materials.

Dimensions

Materials

PLA

Certifications

Benefits for environment

The material we used is a biodegradable, recycled and recyclable PLA biopolymers derived from renewable resources such as corn starch or sugarcane.

Benefits for human being

Low energy consumption to make the frame, use of recycled material, much less environment impact than using carbon fibers or aluminium.