

3DEVO'S

ROLE IN

SUSTAINABLE DESIGN

FOR

ADDITIVE MANUFACTURING

Sustainability is not just a buzzword for 3devo; [it is a fundamental principle driving their approach to additive manufacturing. Recognizing that the future of manufacturing relies on more than just technological advancements](#), 3devo is committed to a holistic perspective that considers the environmental impact of every innovation. Their strategies for Design for Sustainability (DfS) go beyond merely reducing ecological footprints, aiming instead to redefine what it means to be a responsible leader in the additive manufacturing industry.

Innovating with Recycling Technologies

Central to 3devo's mission is their pioneering work in plastic recycling. The company has developed cutting-edge machines such as the Filament Makers and GP20 Plastic Shredder that transform plastic waste into high-quality 3D printing filament. This plastic recycling process

not only reuses materials but also enables the extrusion of filament with various additives, such as carbon fibre, to meet the rigorous demands of professional 3D printing applications.

Through the precise optimization of extrusion parameters—such as

temperature, pressure, and cooling rates—3devo's [filament extruders](#) ensure that recycled filament performs on par with virgin materials. This innovation challenges the traditional view that recycled materials are inferior, demonstrating that sustainability and high performance are not mutually exclusive.



▲ 3devo's Filament Maker machines give plastic waste a second life as 3D printing filament.

Design for Sustainability: Beyond the Basics

3devo's commitment to sustainability extends beyond recycling. Their approach to Design for Sustainability is comprehensive, encompassing material selection, production efficiency, and lifecycle considerations:

MATERIAL SELECTION

3devo's technology empowers the 3D printing industry to embrace sustainability, particularly in its vital connection to plastics. Their machines are adept at transforming challenging materials like MJF (Multi Jet Fusion) powder into FDM (Fused Deposition Modelling) filament. This capability not only supports recycling but also mitigates the risk of microplastics, addressing a significant waste disposal challenge in the industry.

PRODUCTION EFFICIENCY

3devo offers a comprehensive recycling solution that extends beyond just Filament Makers. Their GP20 Plastic Shredder allows users to efficiently shred plastic waste in-house, preparing it for use in a Filament Maker. This integrated approach enhances the viability and appeal of the plastic recycling process, furthering 3devo's commitment to advancing sustainable 3D printing.

LIFECYCLE CONSIDERATIONS

3devo plays a crucial role in reducing the environmental impact of 3D printing by providing the machines that extrude recycled materials into high-quality 3D printing filament. By enabling the creation of filament from recycled sources, 3devo contributes significantly to a more sustainable lifecycle for 3D printing products.



Certain materials lead to significant waste disposal issues, such as MJF powder. 3devo machines can transform this into new filament.

Collaborative Innovation through Strategic Partnerships

3devo's advancements in sustainable 3D printing are further strengthened by strategic partnerships with industry leaders like Riwald and the Fraunhofer Innovation Platform for Advanced Manufacturing at the University of Twente. These collaborations bring essential research and technical expertise, enabling 3devo to push the boundaries of what is possible with recycled materials.

Insights gained through these partnerships have allowed 3devo to enhance recycling technologies and optimize in-house filament production processes. Working with leading experts ensures that innovations are grounded in cutting-edge research and practical application, reinforcing the commitment to advancing sustainable manufacturing practices.

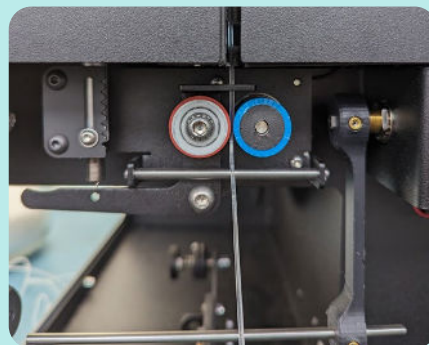


Looking to the Future: Pioneering a Greener 3D Printing Industry

Looking ahead, 3devo remains dedicated to revolutionizing the 3D printing industry with sustainability at its core. Their involvement in projects like Waste2Print exemplifies a commitment to integrating recycled materials into high-quality products and setting new standards for environmental responsibility.

The success of these initiatives reflects 3devo's broader strategy to transform the additive manufacturing sector. By continuing to develop technologies that push the boundaries of 3D printing while contributing to a more sustainable and circular economy, 3devo is committed to leading the charge towards a greener future.

Sustainability and technological excellence are closely intertwined at 3devo. Leadership in plastic recycling and comprehensive Design for Sustainability practices are paving the way for a future where the environmental impact of additive manufacturing is minimized. As 3devo continues to innovate, the company remains steadfast in its mission to promote environmental stewardship and advance the capabilities of sustainable 3D printing. ■



The Filament Makers are fitted with integrated sensors at the extrusion point to help ensure the quality of the filament is high, ready for printing.