

Chocolate Factory Overcomes Costly Machinery Downtime by Replacing Metal Parts with Stratasys High-Performance Composite 3D Printing Material

- *FDM Nylon 12CF thermoplastic containing 35% chopped carbon-fiber provides level of strength and tolerance required to replace metal parts*
- *Replacement time of broken machine parts reduced from one month to one week when using Stratasys additive manufacturing compared to traditional handmade metal replacements*

MINNEAPOLIS & REHOVOT, Israel--(BUSINESS WIRE)-- [Stratasys](#) (Nasdaq:SSYS), a global leader in applied additive technology solutions, today announced that Dutch 3D service bureau, [Visual First](#), is using FDM Nylon 12CF carbon-filled thermoplastic to replace metal machine parts for its customer, *The Chocolate Factory*. The ability to 3D print machinery replacement parts on-demand has significantly reduced machine downtime, ensuring production line continuity for the company.

This press release features multimedia. View the full release here:
<http://www.businesswire.com/news/home/20180109005970/en/>

Based in Rotterdam, Netherlands, The Chocolate Factory runs a network of packaging machines, with the company's daily throughput relying on the smooth operation of a simple, yet crucial, hook-shaped metal part that lifts wrapped bars onto a conveyor belt. A problem occurs when the part malfunctions – typically with such regularity that it necessitates replacement three times a month. As each replacement part is handmade, delivery can take over a month.

“It is crucial that the packaging machine is always operational, especially during hectic periods such as Christmas,” explains Carl van de Rijzen, Business Owner at Visual First. “With Stratasys additive manufacturing, we can produce customized replacement parts on-demand that can perform just as effectively as the metal machine parts. We can 3D print and deliver production parts to The Chocolate Factory in under a week, which is vital to ensuring manufacturing line continuity.”

3D printed, carbon-filled thermoplastic strong enough to replace metal

Van de Rijzen uses Stratasys' high-performance [FDM Nylon 12CF composite material](#), a carbon-filled thermoplastic containing 35% chopped carbon-fiber. Produced on the [Stratasys Fortus 450mc Production 3D Printer](#), the 3D printed replacement machine part is currently being used at the factory. According to van de Rijzen, the team at The Chocolate Factory



3D printed replacement machine part, produced in tough Stratasys FDM Nylon 12CF thermoplastic containing 35% chopped carbon-fiber (Photo: Business Wire)

are impressed with the high stiffness-to-weight ratio of the FDM Nylon 12CF, resulting in parts of extreme rigidity.

“The success of the 3D printed part was instantly clear – the material is impossible to bend,” says van de Rijzen. “The part withstood all tests on the machine and multiple runs were completed without incident. The factory is now enjoying increased production throughput by replacing the metal machine part with our 3D printed version.”

Previously, constant human intervention meant that the functionality of the metal part suffered and the machine was often damaged. “Now, with the ability to optimize the design of the part with the Fortus 450mc, this has improved due to the part being much lighter than its metal counterpart,” continues van de Rijzen. “The Chocolate Factory is also enjoying significant economic benefits too, with the team reporting a 60% cost reduction on the part.”

Following the success of the 3D printed replacement part, The Chocolate Factory is now turning to Visual First to solve other design challenges – most notably, to

develop a prototype casting mold to test acceptance of its products. Traditionally this is made from plastic, which is both time consuming and expensive. “With 3D printed molds created on the Fortus 450mc, the company will be able to further accelerate its production processes,” says van de Rijzen.

“We’re witnessing a growing demand for 3D printed production parts and replacement parts for industrial machinery, especially for packaging machines,” concludes Nadav Sella, Head of Stratasys’ Emerging Solutions Business Unit. “These machines require a high-level of customization due to the large variety of products that are packaged. In many cases, the use of additive manufacturing can not only save time and cost during the manufacture of such machinery, it can also make them more efficient by reducing weight, simplifying the design and increasing functionality.”

About Stratasys

Stratasys (NASDAQ: SSYS) is a global leader in applied additive technology solutions for industries including Aerospace, Automotive, Healthcare, Consumer Products and Education. For nearly 30 years, a deep and ongoing focus on customers’ business requirements has fueled purposeful innovations—1,200 granted and pending additive technology patents to

date—that create new value across product lifecycle processes, from design prototypes to manufacturing tools and final production parts. The Stratasys 3D printing ecosystem of solutions and expertise—advanced materials; software with voxel level control; precise, repeatable and reliable FDM and PolyJet 3D printers; application-based expert services; on-demand parts and industry-defining partnerships—works to ensure seamless integration into each customer’s evolving workflow. Fulfilling the real-world potential of additive, Stratasys delivers breakthrough industry-specific applications that accelerate business processes, optimize value chains and drive business performance improvements for thousands of future-ready leaders around the world.

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