3D PRINTING END USE PARTS: CUSTOMIZED LABELING PLATE FOR HENKEL CONSUMER GOODS

LOCTITE®

HENKEL CONSUMER GOODS LEVERAGES ADDITIVE MANUFACTURING TO INCREASE PRODUCTIVITY, REDUCE LEAD TIME AND CUT COSTS

Background

The Consumer Goods business unit is the cornerstone of Henkel's success story: It all started with a product from this business sector. In 1876, Fritz Henkel founded the company Henkel & Cie in Aachen, Germany. The company's first product was a laundry detergent based on sodium silicate, named "Universal-Waschmittel" (universal detergent). Since then, this branded consumer goods business has grown into a globally active unit with well-known brands, such as Persil, Purex, or Pril. For consumers around the world, Henkel brand names have become an integral part of daily lives. In the markets relevant to us, including detergents, surface cleaners, and air care, our Laundry & Home Care business sector enjoys leading positions on a global scale.

APPLICATION:
Customized 3D Printed Labeling Bottle Plate

MATERIAL:
LOCTITE 3D 3172 HDT50 High Impact Gray

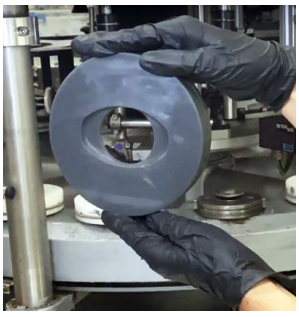
TECHNOLOGY:
Stratasys Origin One Printer

The Challenge

The Henkel Consumer Goods team utilized a labeling bottle plate, a customized component that houses bottles while the labels are secured. Traditionally, this component was manufactured using CNC machining. This method posed some challenges for the team because the lead time for a single component was 12 weeks.

In addition to the long lead-time, each part was made from stainless steel or aluminum. Making these parts using CNC machining requires a new block of material every time, resulting in astronomically high material costs, machine usage, and significant waste.

The team working in the supply chain for Consumer Goods needed to find a new solution to reduce lead time, cut costs, and reduce waste.



CNC manufactured part removed

3D Printed labeling plate fitted

Henkel

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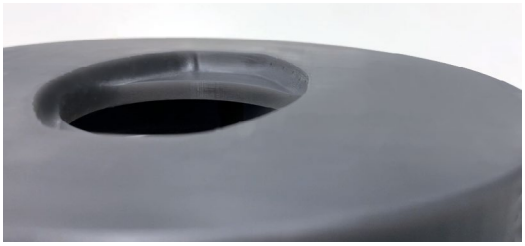
The Solution

Printing Technology: Stratasys Origin One Printer
Material Selection: LOCTITE 3D 3172 HDT50 High Impact Gray
Cleaning Fluid : IPA

39 MPa	1400 MPa	100 %	73 J/m	52°C
Tensile Stress at Break	*Young's Modulus*	*Elongation at Break*	*Impact Strength*	*HDT at 0.455 MPa*



Superior surface finish of LOCTITE 3D 3172 demonstrated on the labelling plate

The Consumer Goods team needed to move away from traditional manufacturing methods to solve their problems. Utilizing Additive Manufacturing, specifically the DLP process, allowed the team to minimize inventory and reduce costs by printing replacements on demand. The team ultimately choose LOCTITE 3D 3172 HDT50 High Impact in Gray as the most suitable material from the LOCTITE 3D Printing portfolio. A durable photopolymer, LOCTITE 3D 3172 enables the creation of functional parts with high stiffness, superior surface finish, and excellent impact resistance. Additionally, parts made in this material can be machined, tapped, or polished, making it ideal for industrial applications.

The new and improved labeling bottle plates were created by leveraging LOCTITE 3D 3172 and the DLP printing process on the Stratasys Origin One printer. Using an additive process instead of more traditional subtractive manufacturing methods, the Consumer Goods team accelerated go-to-market time, reduced costs, and eliminated the tooling limitations. Additionally, the team learned that using photopolymers is much more efficient than other technologies while still providing the excellent surface finish and dimensional accuracy required for this particular part.

BENEFITS

The Consumer Goods team realized an additive manufacturing process's key benefits: significant savings and lead time reduction. They also gained first-hand experience with photopolymer printing, learning that LOCTITE 3D materials withstand real-life environmental factors better than traditional CNC machined parts.

With the combination of the exceptional print quality achievable on the Origin One and high-performance resins from LOCTITE, the team reduced lead time by eight weeks for replacement parts. They also enjoyed newfound freedom to create on-demand replacements, eliminating the need to carry inventory. Additionally, they can continue to improve product performance over time with the ability to iterate designs quickly with an Additive Manufacturing process, enabled by LOCTITE 3D Printing materials.

"With LOCTITES's new developed 3D Printing resins, we have been able to get closer to a CNC finish that checks all surface restrictions we had when designing this new format part for 3D Printing Technologies," explains Nikolas Hoehme, International Digital Transformation Manager. "Achieving a faster lead time from design to production is also a major benefit in a market that demands new bottle designs more frequently".

Want to learn more about Henkel's unique material solutions for the additive manufacturing industry?
Visit Henkel's LOCTITE 3D Printing at **LoctiteAM.com** or reach out to us via **loctite3dp@henkel.com**

About LOCTITE

LOCTITE Additive Manufacturing delivers unique photopolymers with production capability, customized resins and engineering services to identify the best application to address your needs. With a constantly growing portfolio of high-performance materials, specialized equipment and post-processing solutions, LOCTITE overcomes the limitations of conventional 3D printing to enable additive manufacturing for the production of durable, functional parts. Through its strategic partnership with technology leaders for specialized equipment, LOCTITE is driving the adoption of 3D printing beyond prototyping and toward the production of final parts. **www.LoctiteAM.com**

About stratasys

Stratasys is leading the global shift to additive manufacturing with innovative 3D printing solutions for industries such as aerospace, automotive, consumer products and healthcare. Through smart and connected 3D printers, polymer materials, a software ecosystem, and parts on demand, Stratasys solutions deliver competitive advantages at every stage in the product value chain. The world's leading organizations turn to Stratasys to transform product design, bring agility to manufacturing and supply chains, and improve patient care. To learn more about Stratasys, visit **www.stratasys.com.**