



Beauty by Design

IMPROVING COSMETIC PACKAGING AND PRODUCTION
WITH MULTI-MATERIAL, COLOR 3D PRINTING

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– Yann Crapet, Albéa

CASE STUDY



A mascara bottle 3D printed using Stratasys Connex3 and VeroWhite material

Operating at the heart of a fast-paced consumer goods industry, Albéa, a leading cosmetics and personal care packaging manufacturer, has learned how to meet demanding customer expectations. The company owes its success to two strengths: its ability to adapt within a challenging and fast-moving industry, and its constant search for innovation and creativity.

Leading Through Innovation

In the early 2000s, Albéa outsourced its prototyping, commissioning suppliers who used 3D printing technologies including stereolithography and laser sintering. However, limitations meant Albéa was constrained in terms of color and material.

“When it came to meeting our criteria, we were unable to tick the boxes,” said Hugues Barthoux, test coordinator at Albéa’s Le Mans Test Facility. “We couldn’t improve our time-to-market goals using the few shades of white and grey possible, and the materials were too rigid for our needs.”

Albéa needed to create prototypes in a wider range of materials and colors to boost flexibility and responsiveness. So they brought Stratasys PolyJet technology in house, first investing in the Objet30 3D Printer and later a Connex3. With the ability to 3D print multi-material parts in many colors, Albéa can now demonstrate realistic, functional prototypes to customers — a service crucial to their business.

“We recently created a fully-functional lipstick prototype, including a full tube mechanism and a special molding in which the lipstick formula was melted,” said Yann Crapet, project manager at Albéa’s Gennevilliers Innovation Centre. “When evaluating products for design and functionality, this exceptional level of realism and multi-material capabilities at the prototyping stage is a major advantage for customers, aiding decision-making and accelerating time-to-market.”

Design Freedom

For Albéa’s team, the faster prototyping process unleashed more creative freedom. And liberating the team to innovate and explore new designs has enabled the production of items considered impossible before including complex parts such as semi-transparent perfume bottles that require high precision, thanks to the ability to 3D print translucent, flexible materials with a smooth surface finish.

“The choice of colors and materials we can access now has taken us into uncharted territory in terms of what we can design and supply our customers,” said Crapet. “This, along with having the technology in-house, affords us far more control and flexibility. We can offer up to ten highly accurate packaging prototypes to customers in less time, improving customer satisfaction.”

Expanding 3D Printing Applications

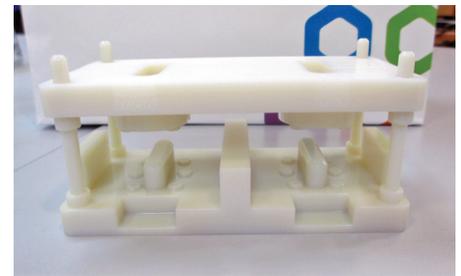
Following the advances made in prototyping, Albéa extended the use of PolyJet to tooling.

“We not only use the Connex3 to create prototypes, but to create assembly tools for the production line. We’ve been able to reduce our supply chain by removing the need to outsource prototypes and tools, resulting in significant efficiencies across the production process,” said Crapet.

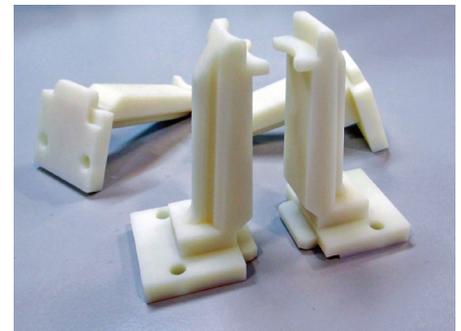
One example is a 3D printed production tool used to hold packaging products in place during painting. This helps Albéa’s technicians assess part shape and size to ensure correct fit in the painting booth. “Using Digital ABS, we can quickly produce assembly tools that perform like our traditionally manufactured tools.



Perfume caps 3D printed on a Stratasys Connex3 in VeroWhite and VeroClear materials



This manufacturing tool produced on a Stratasys Connex3 is used to verify the thickness of the final production part.



3D printed handling fixture in VeroWhite material. Installed on a robot, this manufacturing tool enables the team to lift the caps on the rigid packaging during production.

We used to produce these parts in two weeks using CNC machining, but with our Connex3 it now takes us only two days,” said Crapet.

With the success of PolyJet in improving production and prototype quality, Albéa is now looking to FDM to further strengthen its tooling capabilities.

“The positive impact additive manufacturing has had on our processes can’t be overstated – the numbers speak for themselves,” said Crapet. “It has become central to our prototyping activities and our production line, so naturally we want to explore how FDM can deliver similar value in other application areas.”

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