3D SYSTEMS

Birdstone Proves Packaging Design with Clear 3D Printed Prototypes

3D Systems On Demand Manufacturing helps packaging design firm achieve aesthetic and functional prototypes with clear SLA 3D printing

The final packaging design offers a functional and convenient experience to the manufacturer, retailers and Carman's customers.

Anyone who has opened a box of crackers to find the contents reduced to broken bits and pieces knows firsthand the consequences of poor packaging. Carman's, an Australian food company passionate about only using the best ingredients, is mindful of how it delivers its products to consumers to ensure a high quality experience before the first bite is ever taken. Therefore, when Carman's launched its new Super Seed & Grain Crackers, the food company kept presentation and preservation top of mind, and enlisted Birdstone, an Australian packaging design agency, to design an engaging tray insert. Due to the various requirements they needed to balance, multiple prototypes were required to demonstrate the proposed designs both aesthetically and functionally.

Balancing client requirements in packaging design

The packaging considerations in play for Carman's were multifaceted: it needed to be easy to open, functional as a serving vessel, and enable Carman's customers to reclose the container for storage. For ease of access, it was determined that the crackers should be stacked in three columns with room to encase the top crackers without crushing them, but also be easy to fill to not disrupt the production line. Lastly, the packaging needed to meet the retailer requirement for vertical packaging to maximize differentiation on the shelves. There was also a question of on-shelf instability due to the light weight of the product and the properties of the tray material.

Birdstone knew that arriving at the correct design would require accurate prototypes, and therefore reached out to 3D Systems On Demand Manufacturing due to previous successful collaborations.

CHALLENGE:

Accurately prototype functional clear packaging design to select the best option for a new product launch.

SOLUTION:

Clear 3D printing by 3D Systems' On Demand Manufacturing experts using Accura® ClearVue™ SLA printing with additional copies created using cast urethane.

RESULTS:

- Accurate quoting kept project cost within budget
- SLA prototypes ready in four days
- Accura ClearVue and 3D Systems' cast urethane process deliver water-clear parts
- Functional and aesthetic prototype features enabled effective manufacturing tests and consumer research

Clear 3D printing enabled a prototype that was both aesthetic and functional.

Due to the complexity of the casing designs and unique functional requirements involved, 3D Systems' On Demand Manufacturing experts helped Birdstone select the most suitable prototyping process, materials, and finishing process to meet its outlined requirements. Using Stereolithography (SLA) 3D printing on 3D Systems ProX® 800 machine, 3D Systems built both a one- and two-piece prototype in Accura® ClearVue™, a rigid and tough clear 3D plastic material offering the highest clarity and transparency on the market.

Prototyping functional and aesthetic packaging

In just four days, the SLA prototypes were printed and finished to meet Birdstone's quality and realism requirements. 3D Systems' On Demand Manufacturing experts followed the premium finishing protocol for Accura ClearVue to deliver water-clear prototypes through a process of wet and dry sanding followed by clear coating. These prototypes were then submitted for manufacturing tests and consumer research to validate and rate the success of each concept, and to assess the performance and limitations of each packaging option at all critical touch points.

At this stage, Birdstone ordered four copies of the leading packaging design from 3D Systems On Demand Manufacturing, which were created using 3D Systems' cast urethane process. The preferred SLA prototype was used to make a mold which was then used to cast additional water-clear copies using polyurethane, a material very close to what would be used for the final product.

Arriving at the final design

Following full evaluation of the clear prototypes, the final design was officially selected: an attractive one-piece clamshell case, uniquely contoured to the shape of the stacked biscuits. According to Grant Davies, Director, Design & Strategy at Birdstone, "The final design plays to the strengths of the packaging material and provides a secure, re-useable home for the crackers throughout the supply chain and into the customers' hands. It is functional enough to be filled, stylish enough to serve from, and securely re-closeable for on-the-go snacking." Birdstone says that by adding another level of consumer engagement through functional and aesthetic packaging, Carman's is able to offer a deeper brand experience beyond consumption.

Carman's exciting range of crackers has forged a new place in the market for the company, and the tray has earned it many fans through the cleverness and convenience of its design. Birdstone says it is delighted to have contributed to a successful final product for its client, and to answer the unique challenges of the project within a tight deadline. "As usual," says Davies, "3D Systems On Demand Manufacturing was a wonderful partner and worked with us to provide the most effective and appealing concept prototypes within the project budget."

Birdstone's packaging insert for Carman's Super Seed & Grain Crackers was a 2018 finalist in the Packaging & Processing Innovation & Design Awards.

On Demand Manufacturing delivered quick and appealing prototypes to help Birdstone accelerate product development.

3D Systems Corporation
333 Three D Systems Circle
Rock Hill, SC 29730
www.3dsystems.com