APPLICATION SPOTLIGHT

Prototypes
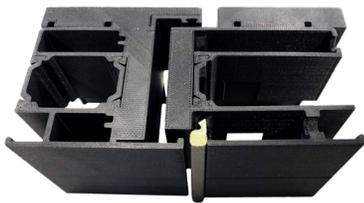
	Time	Cost
Traditional	156 hrs	$800
Markforged	12 hrs	$10
Savings	**93%**	**99%**

Centor®

Centor is an award-winning manufacturer of industrial custom integrated door systems.

Challenge

Validating component and assembly designs was inhibited by high machining costs and unreliable outsourcing.

Solution

Robust high-quality 3D printed parts provide a more efficient method to produce functional prototypes.

Results

Centor rapidly iterates on product designs and validates fit, form and basic function by 3D printing prototypes in-house.

Functional Rapid Prototyping

Centor develops custom integrated doors for residential and commercial buildings. Each unique design requires a proof of concept. Three in-house machinists used to spend all their time fabricating components in low volumes, with additional components being outsourced. This approach led to inconsistent quality, lengthy production times, and excess costs. Seeking an alternative, Group Manager of Product and Engineering David Chappell took a chance on Markforged and was immediately impressed: "It's the first time I've ever actually seen a 3D printer do what it promised in a real-life design studio factory like ours. It just runs."

While his team of experienced manufacturers intially expressed doubt about integrating 3D printing in their workflow, they now run the printer almost 24/7. It enabled them to redirect machining bandwidth, iterate on designs, learn quickly from printed parts, and present compelling proofs of concepts to customers. This in-house efficiency "takes out one blockage to innovation". Centor further optimized their production by printing jigs and weatherproof end-use parts. They will soon have a Markforged printer in each of their four factories across Australia, China, Poland, and the US.

+ Form and Function

Tight tolerances ensure that multiple components fit together perfectly and enable the prototype folding doors to function reliably.

+ Production On Demand

Markforged's cloud software allows Centor to easily translate their CAD designs into printed parts, with accurate time and cost estimates.

+ Complex Geometries

Free from the constraints of subtractive machining, 3D printed parts can be designed with complex geometries that improve product function.