Elevating Custom Solutions

SODIMAS DESIGNS HIGH-END ELEVATORS WITH 3D PRINTING

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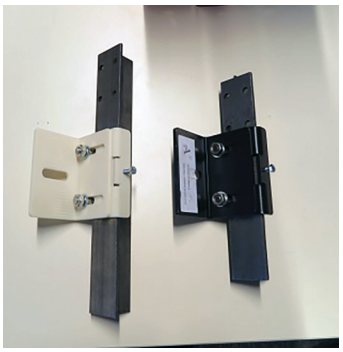
– Mathilde Richy, Sodimas

CASE STUDY



3D printed prototype part (left) is tested for form, fit and function before the final part (right) is produced.

Sodimas began designing and selling pre-assembled elevator components in 1975. With a strong commitment to R&D, the French manufacturer has made elevators safer, easier and more efficient. Sodimas now specializes in high-end custom elevators that can be adapted to all architectural styles and projects with high-quality materials and finishes.

“Sodimas is focused on the niche elevator business, developing a relatively small series of customized solutions,” said Patrice Arnoult, general manager at Sodimas. “We need to innovate a great deal, and that’s why 3D printing is so important to our company.”

Sodimas depends on Stratasys FDM® technology for three primary applications: functional prototyping, assembly jigs, and sales tools and teaching aids.

Fast Design Validation

Sodimas produces aluminum elevator cabins, and leverages 3D printing during the concept and design development process.

“We simultaneously design and produce parts used to assemble the elevator’s ceiling, walls and floor,” said Stéphane Réau, deputy technical director at Sodimas. “With 3D printing, we’re able to quickly check the design and assembly for the correct fit, before proceeding to manufacturing the elevator in aluminum.”

3D printing gives Sodimas engineers substantial time-savings and flexibility during the design development process.

“When I produce a final mechanical part in metal, I have to wait about 15 days. But with our Stratasys 3D Printer, I can have my part right in front of me in a few hours, assemble it and validate it immediately,” said Mathilde Richy, structural calculation manager at Sodimas.

Productivity Enhancements

Sodimas 3D prints productivity-boosting assembly tools for various elevator components, often using ULTEM™ 1010 resin, for its strength and stability.

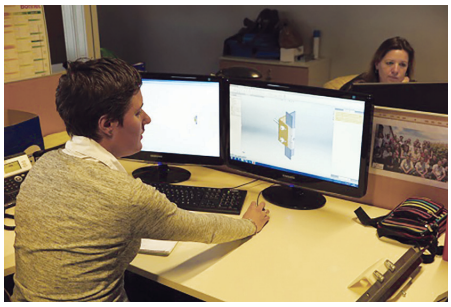
“We needed to fine-tune a component on an electronic assembly, which is a challenge – placing the part in the exact right place can be tricky,” said Réau. “So we 3D printed a custom jig to fit the assembly, which is easier for the operator and takes just a few seconds.”

3D printing customized mechanical models also helps Sodimas educate customers and staff. It is important customers understand how an elevator functions inside the shaft. Sodimas originally used a flat mechanical model mounted on a piece of wood to demonstrate, but it is heavy and did not provide a true three-dimensional perspective. Now, the 3D printed elevator model allows customers and staff to actually see the car ride up and down in the shaft. The model is extremely easy to use and lightweight to transport.

Streamlined Inventory

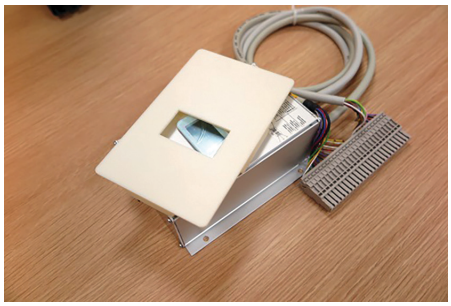
Looking ahead, Sodimas plans to reduce their large inventory of spare parts and expenses with a digital library of 3D printed parts.

“We have been selling elevators for 40 years, so there are a lot of parts we have to keep in inventory,” said Arnoult. “But now with 3D printing, we can produce some final parts by ourselves, allowing us to provide our customers with the same service while reducing our warehouse expenses.”



Sodimas engineer designs the prototype in CAD.

The 3D printed elevator training model (right) is lighter than the previous wood-mounted version (left).



Sodimas uses a custom 3D printed jig to ensure the electrical component is placed accurately during assembly.

Sodimas designs custom high-end elevators that can be adapted to a wide variety of architectural styles and needs.

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