CASE STUDY

Transportation Company Makes All of the Stops with 3D Printed Parts

Filament Identified Helps Meet Safety Standard for Railway Sector

Alstom, a multi-national parts manufacturer for high-speed trains, metros, trams, and e-buses, needed open 3D printing material that would work with its numerous 3D printers and EN45545-2 compliance standard. To help find a material that would be compatible with its 3D printing equipment and reduce manufacturing time, costs, and material waste, Alstom turned to 3D at Nexeo Plastics.

Alstom uses several different 3D printers, allowing its team to print different materials from a variety of suppliers. However, each material and printer require a different set of printing parameters. To maximize printing properties in terms of surface finish, performance, etc., the right printing parameters need to be used, which can complicate the procedure and add time to the process. Any material used in European rail vehicles must follow the EN45545-2 standard to achieve the highest level of safety possible in the event of a fire. This standard specifies the reaction to fire performance requirements and establishes hazard levels for materials.

There are a limited number of suppliers that produce EN45545-2 compliant materials for 3D printing. To help Alstom find the right material, the 3D at Nexeo Plastics team utilized its 3D printing laboratory in Barcelona, Spain, to test several possible material candidates in collaboration with 3DPrinting Hub Alstom Barcelona. Nexeo Plastics, known for its material and 3D printing expertise, identified Covestro Addigy® PA6/66-GF20 FR LS Low Smoke filament as the material of choice that could provide ease of processability in open systems, flame retardancy, and high-performance.

PROJECT AT-A-GLANCE

Recorded Benefits

- Decreased part production time
- Reduced costs and materials
- Minimized on-hand inventory
- Replaced 3D material for metal part production

Challenge

A global manufacturer of parts for the transportation industry needed an open systems 3D printing filament material for the railway sector that was compliant with the EN45545-2 safety standard.

Solution

3D at Nexeo Plastics helped identify a material that met performance requirements, versatility and manufacturing safety standards.

Result

Helped customer reduce production time and costs, increasing the output of various parts.

“We used our experience in printing parts and troubleshooting to help solve and optimize a solution for Alstom,” said Daniel Tomàs, business development specialist for 3D at Nexeo Plastics. “We tested the filament in our 3D printing laboratory to optimize the printing parameters to achieve the best quality and performance. The resulting printing guidelines were sent to Alstom, so that they would not need to adjust the printer settings.”

By partnering with 3D at Nexeo Plastics, Alstom was able to help standardize its 3D printing materials, allowing it to reduce manufacturing times and costs, reduce material waste, as well as substitute plastic material for some of its metal parts.

Discover how partnering with our team of experts can contribute to your 3D printing solutions and help you achieve efficiencies in your processes.

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