LEHVOSS to present new solutions for 3D printing at JEC World 2024

The company's LUVOCOM 3F range of pellets and filaments are gaining adoption across multiple verticals

One focus of this year’s JEC World 2024 trade fair appearance of the LEHVOSS Group are solutions in the field of flame protection. Special applications in the transport sector place high demands on the materials used. A relevant standard here is ISO 45545 for flame protection in rail transport. LEHVOSS offers high-quality and innovative flame-retardant solutions as well as finished materials for various processing methods. These include extrusion, injection molding, and 3D printing.

LEHVOSS has long been offering highly resilient materials for industrial 3D printing. Applications include directly printed structural components as well as molds for injection molding and thermoforming of thermoplastic materials, or laminating fiber composite materials.

LUVOCOM 3F is based on many different thermoplastics like PC/ABS, PA, PET, PPS and PEEK and is dedicated to respective 3D printing technologies such as Fused Granulate Fabrication (FGF) and Fused Filament Fabrication (FFF). The materials are specially designed. In addition to high mechanical values, and chemical and temperature resistance, they also offer specially adjusted flame resistance.

LUVOCOM 3F for demanding end-use applications

This is an important property when using plastics in public transport. The European railway industry relies primarily on the ISO 45545-2 standard, one of the most demanding fire testing standards in the world. LUVOCOM 3F PEI 50236 GY, based on polyetherimide (PEI), already meets the EN45545-2 R1 HL3 certification for 3D printed specimens that are only 2 mm thick. The test specimens made from LUVOCOM 3F PEI 50236 GY achieved previously unattainable test values and thus positioned the material as one of the best in its class for railway applications. This enables the use of 3D printed parts in sensitive applications in public transportation.

3D printed mold for CFRP and GFRP components made of LUVOCOM 3F. Mold produced by NEDCAM Solutions B.V.

LUVOCOM 3F for 3D printed concrete formwork

The production of concrete formwork is in many cases complex, time-consuming and cost-intensive. This is where 3D printing can offer solutions. At JEC World 2024, LEHVOSS is presenting an example of 3D printed concrete formwork. With the help of 3D scanners, parts can be reproduced more easily for restorations, even if the old forms are no longer present. After scanning, the forms can go straight into the printing process. The production of complex designs is also made easier by 3D printing. In addition, the overall use of materials is reduced.

LUVOCOM 3F for 3D printed lamination forms

Tools manufactured in 3D printing for the lamination of prototypes or small series represent a technically high-quality and economical alternative to conventional mold making since complex and time-consuming roughing processes are replaced by near-net-shape 3D printing and the subsequent fine finishing process. LUVOCOM 3F enables high-strength end parts. Additional benefits are low warpage, very good machinability, recyclability and lower weight of the tools compared to aluminum and steel. Depending on the polymer base, it can be used for low and high consolidation temperatures and a wide variety of resin systems. At JEC LEHVOSS will present a lamination mold made by FGF technology using LUVOCOM 3F.