3D-Printed Lamination Mold

Material:	LUVOTECH 3F eco PC/ABS with glass fiber reinforcement
Part manufacturer:	Nedcam Solutions B.V.
Part weight:	13 kg
Printing time:	6 hours
Milling time:	4 hours
Sanding/polishing:	5 hours. Surface partly printed, milled and polished to grid 3000.

Toolmaking for sophisticated composite components made of CFRP or GFRP always places high demands on the materials used:

- The cost of the tool
- The heat deflection temperature for various consolidation conditions
- The machinability to produce the best surface qualities
- The handling during the laminating process is comparable to the known tools

Printing laminating forms from LUVOCOM 3F by direct extrusion (FGF) has already proven itself in many cases. The shapes can be printed close to the contour at low cost. The subsequent machining effort for surface modeling is reduced to a minimum. Compared to conventional block materials (e.g. resin blocks), the specific cost of the mold material is significantly lower; and the resulting chip volume is significantly less. Chips are no waste because complete recycling is possible since the material is thermoplastic.

Printed tools offer a significant efficiency and cost advantage, especially for one-off production, small series or prototypes. Component adjustments during test phase and the subsequent production of new tools can be implemented very quickly. After the separating layer has been removed, the tool material can be ground and fully recycled.

In order to meet the respective starting temperatures of a wide variety of reaction resin systems, always the best printing materials can be selected from the wide LUVOCOM 3F material portfolio, such as PC/ABS, PA^{HT}, PPS, PEEK, PEI. Even autoclave storage at high temperatures can be implemented. Since LEHVOSS 3D printing materials can be printed in an unheated built room, the mold size is theoretically not limited. Through the direct printing of the granules, high output quantities are possible, which enables a very rapid mold production. Printed forms usually have a lower weight than milled ones, which makes handling much easier.

nedcam shaping technology

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