

Title (en)

3D-PRINTED ELASTIC PRODUCTS REINFORCED BY MEANS OF CONTINUOUS FIBRES AND HAVING ASYMMETRICAL ELASTIC PROPERTIES

Title (de)

MITTELS ENDLOSFASERN VERSTÄRKTE 3D-GEDRUCKTE ELASTISCHE ERZEUGNISSE MIT ASYMMETRISCHEN ELASTISCHEN EIGENSCHAFTEN

Title (fr)

PRODUITS ÉLASTIQUES IMPRIMÉS EN 3D, RENFORCÉS PAR DES FILAMENTS, DOTÉS DE PROPRIÉTÉS ÉLASTIQUES ASYMÉTRIQUES

Publication

**EP 3849778 A1 20210721 (DE)**

Application

**EP 19762999 A 20190910**

Priority

- EP 18194177 A 20180914
- EP 2019074030 W 20190910

Abstract (en)

[origin: WO2020053168A1] The present invention relates to a fibre-reinforced 3D-printed elastic product (1, 3, 4, 7, 10, 12), wherein the product comprises a weight proportion of  $\geq 50\%$  of a polymer having a mean molecular weight of  $\geq 5000$  g/mol, measured by means of GPC, and a weight proportion of  $\geq 0.5\%$  and  $\leq 20\%$  of one or more fibres having an aspect ratio of  $\geq 100$  and a length of  $\geq 3$  cm and  $\leq 1000$  cm, the product being produced at least in part by means of an FFF (Fused Filament Fabrication) method, and the product having a tensile modulus of  $\geq 1.5$  GPa in the region of the fibre reinforcement and in the direction of the fibre symmetry axis. The product also has a tensile modulus, measured according to DIN EN ISO 527-1, of  $\leq 1.2$  GPa in the region of the fibre reinforcement and perpendicular to the fibre symmetry axis, and has a yield strength of  $> 5\%$ , measured according to DIN EN ISO 527-1, perpendicular to the fibre symmetry axis.

IPC 8 full level

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CPC (source: EP US)

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Citation (search report)

See references of WO 2020053168A1

Designated contracting state (EPC)

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**EP 3623137 A1 20200318**; CN 112654489 A 20210413; EP 3849778 A1 20210721; US 2021324177 A1 20211021; WO 2020053168 A1 20200319

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**EP 18194177 A 20180914**; CN 201980060044 A 20190910; EP 19762999 A 20190910; EP 2019074030 W 20190910; US 201917273343 A 20190910