FORTIFY

Digital Composite Manufacturing (DCM)

FLUXPRINT™

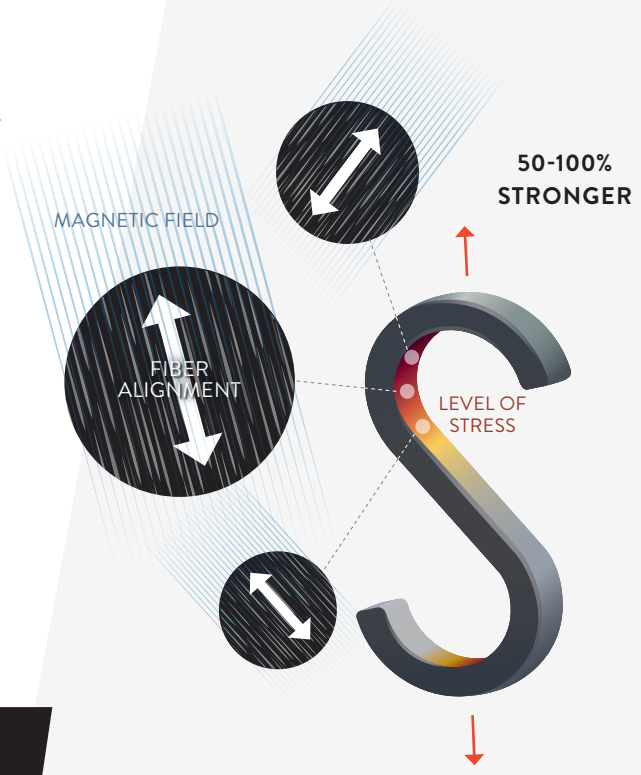
FIBER ALIGNMENT MODULE

MAGNETIC ALIGNMENT

Fluxprint is a breakthrough technology that aligns reinforcing fiber within a photopolymer resin during fabrication. Fibers undergo a propertiary treatment to make them magnetically responsive. Magnetic fields then align fibers throughout the build to optimize strength, stiffness, and other characteristics of the part. This controlled approach to fiber alignment is unprecedented in both 3D printing and traditional manufacturing.

OPTIMIZED MICROSTRUCTURES

As 3D printing applications become more demanding, users are seeking higher performing materials. Photopolymers alone cannot meet these requirements. Fluxprint combines proven fiber reinforcement strategies with high resolution DLP printing. Users can now optimize fiber orientation based on load conditions of their parts.



Fortify software optimizes fiber alignment based on part load conditions

KEY APPLICATIONS

MOLD INSERTS

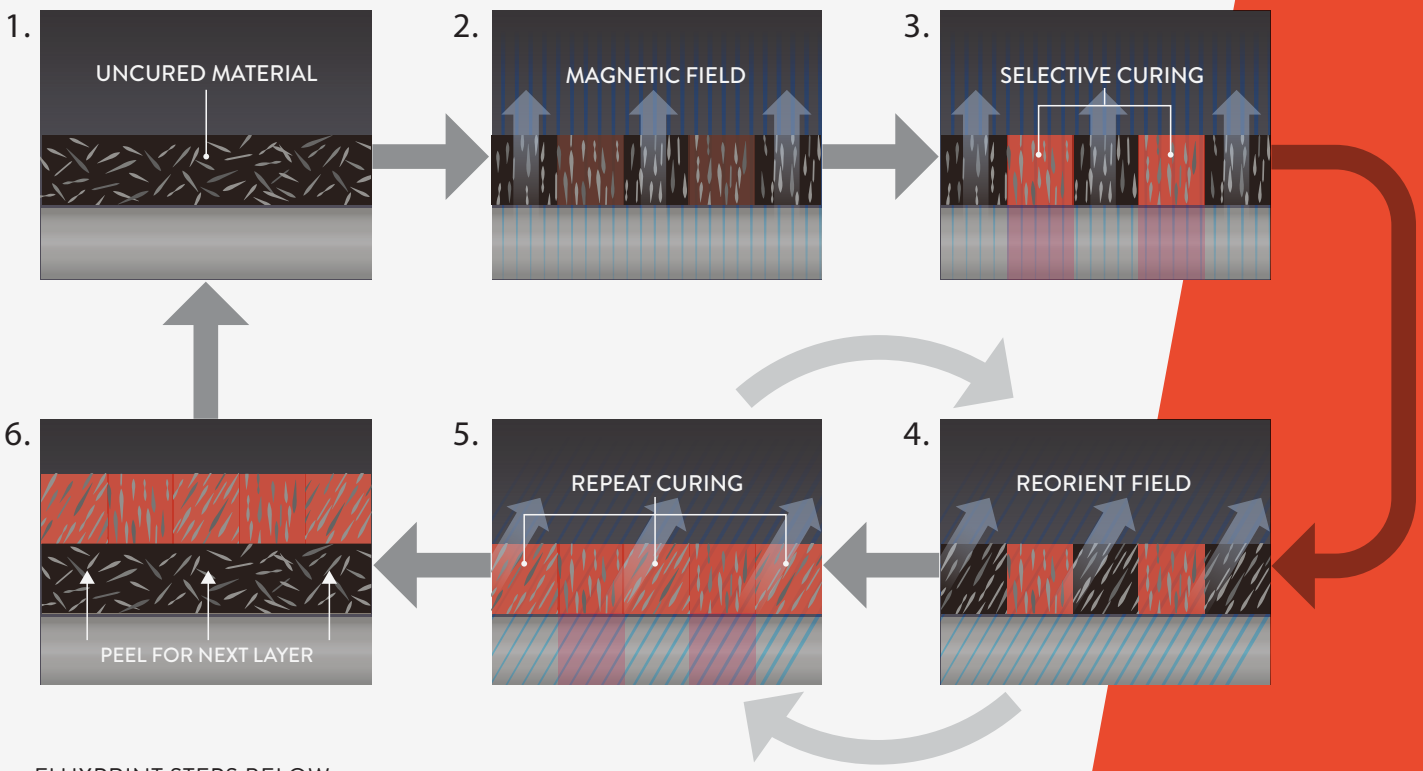
Ceramic fibers allows tools to withstand the heat and pressure of an injection molding press.

PRODUCTION PARTS

Fiber reinforcement provide gears with better wear resistance, offering 3D printed gears a replacement for metal.

FLUXPRINT is one module in Fortify's DCM (Digital Composite Manufacturing) 3D printing platform. To learn more about the DCM and the hardware behind Fortify visit www.3DFortify.com

HOW IT WORKS (SEE STEPS BELOW)



FLUXPRINT STEPS BELOW:

1. A layer of material is supplied to the build area with reinforcement randomly aligned.
2. A magnetic field is applied to align the reinforcing particles.
3. Active voxels are exposed to UV light, curing the reinforcement orientation in those voxels (now shown in red).
4. The magnetic field is shifted to set a new orientation for the reinforcement.
5. Repeat UV exposure step to cure orientation for the next set of voxels (repeat as needed).
6. Build plate adjusts to bring in uncured material matrix for the next print layer.

Build Volume: 8"x4.5"x13"
Minimum (z): 25 µm
Minimum Pixel Pitch: 37.5 µm

WHAT WILL YOU FORTIFY?

Discuss your application with our engineering team today.

FORTIFY

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