

# FLUXPRINT™

## FIBER ALIGNMENT MODULE

### MAGNETIC ALIGNMENT

Fluxprint is a breakthrough technology that aligns reinforcing fiber within a photopolymer resin during fabrication. Fibers undergo a proprietary 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.

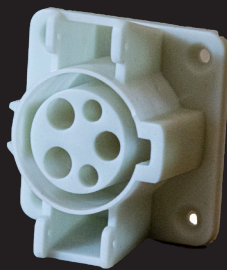
### FLUXPRINT CONFIGURATIONS

#### FLUXPRINT Z

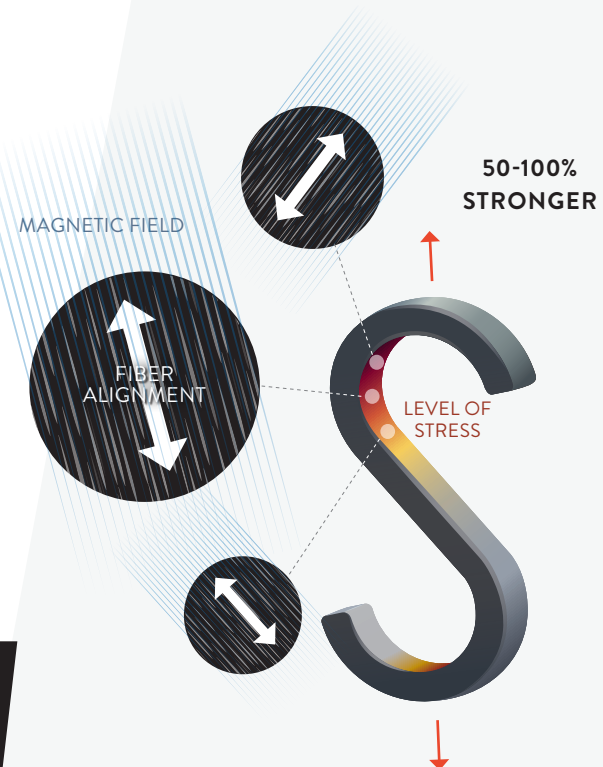


Z-axis fiber alignment integrated on the FLUX ONE printer. This field of alignment improves strength in the Z-axis perfect for 3D printed mold tools.

#### FLUXPRINT 360



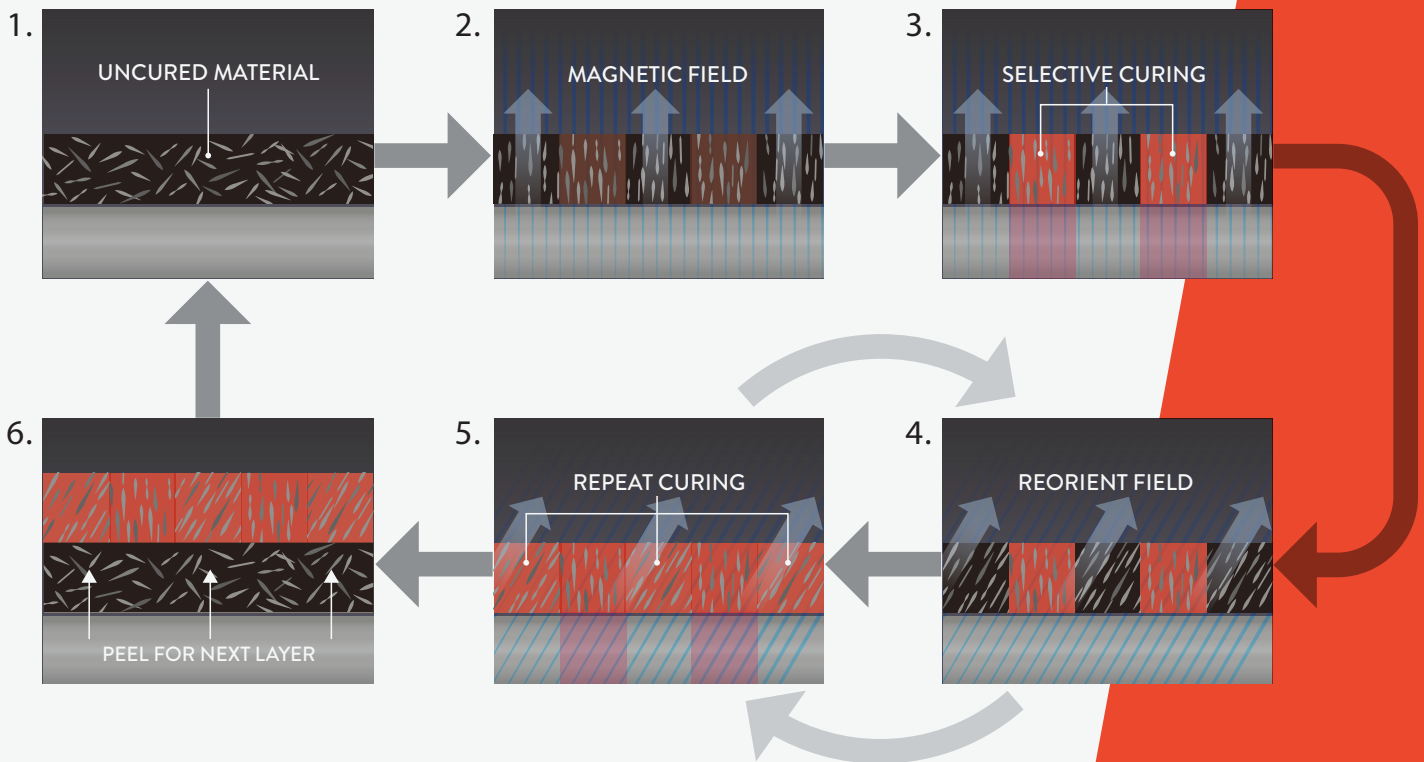
360 degree control of fiber alignment integrated on the FLUX 3D printer, opening the aperture for material properties such as optimized stress profiles and directed thermal conductivity. Key applications include thermal management devices and high performance industrial connectors.



Fortify software optimizes fiber alignment based on part load conditions

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](http://www.3DFortify.com)

## HOW IT WORKS (SEE STEPS BELOW)



### FLUXPRINT 3D 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.

## WHAT WILL YOU FORTIFY?

Discuss your application with our engineering team today.



510 Rutherford Ave, Suite 1, Boston, MA 02129

3DFortify.com / sales@3dfortify.com



Resolution  
Z (layer height): 25 - 250  $\mu\text{m}$   
XY (pixel pitch): 75  $\mu\text{m}$



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