



# PELLETS | FLAKE TESTING AND VALIDATION



## 1 Granulation \$500

Granulate 5kg plastic waste into 4mm particles with our SHINI Low Speed Granulator

## 2 Extrusion \$1,000

Conduct particle size analysis, dry the material, & load it into Gigabot X to quantify the max extrusion rate. Establishes the initial print temperatures and identifies any extrusion issues

## 3 Print Optimization \$2,250

Print multiple test articles of increasing complexity to optimize print settings. A Simplify3D profile with optimized settings will be provided

## 4 Material Properties \$1,250

Use ASTM standards to conduct tensile, 3-point bending, or compression testing to established material properties for industrial applications

## MECHANICAL PROPERTIES

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Our Admet 50kN Universal Testing System is capable of finding the mechanical properties of 3D-printed materials using standardized test procedures:

- Tensile ( ASTM D638 )
- Flexural ( ASTM D790 )
- Flexural Fatigue ( ASTM D7774 ) & more upon consultation

## DATA ANALYSIS

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Aggregated stress data across all samples are given with average and standard deviation Stress-strain curves are given for each sample to show fracture characteristics

## EXPERIMENTATION

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Changes in slicing parameters of utilization of post-processing techniques (annealing, smoothing, sterilization) can be compared. Null hypothesis one-tailed tests are used to determine statistical significance of claims

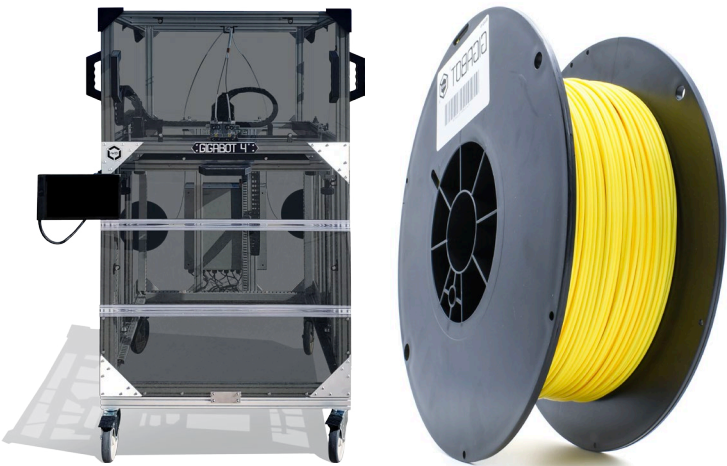
## FAILURE ANALYSIS

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Test specimens can be 3D scanned at 0.025mm resolution to show deformation after testing. Fractures can be imaged with 60x magnification microscopy



# FILAMENT TESTING AND VALIDATION



## MECHANICAL PROPERTIES

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Our Admet 50kN Universal Testing System is capable of finding the mechanical properties of 3D-printed materials using standardized test procedures:

- Tensile ( ASTM D638 )
- Flexural ( ASTM D790 )
- Flexural Fatigue ( ASTM D7774 ) & more upon consultation

## DATA ANALYSIS

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Aggregated stress data across all samples are given with average and standard deviation Stress-strain curves are given for each sample to show fracture characteristics

## EXPERIMENTATION

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Changes in slicing parameters of utilization of post-processing techniques (annealing, smoothing, sterilization) can be compared. Null hypothesis one-tailed tests are used to determine statistical significance of claims

## FAILURE ANALYSIS

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Test specimens can be 3D scanned at 0.025mm resolution to show deformation after testing. Fractures can be imaged with 60x magnification microscopy

### Print Optimization \$500

Print multiple test prints of increasing complexity to optimize print settings. A Simplify3D profile with optimized settings will be provided

### Material Properties \$1,250

Use ASTM standards to conduct tensile, 3-point bending, or compression testing to establish material properties for industrial applications

### Custom Analysis Quote

Custom tests can include multi material testing, various bed adhesives, heat treatment, or other technical tests

- Contact us for Pricing