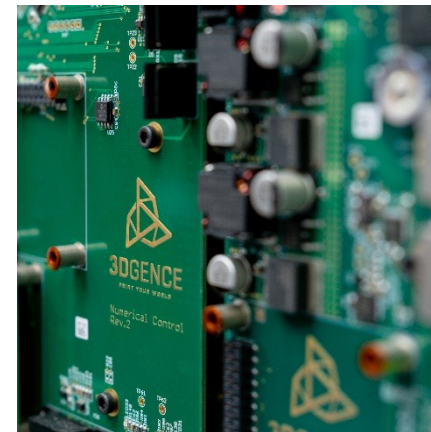


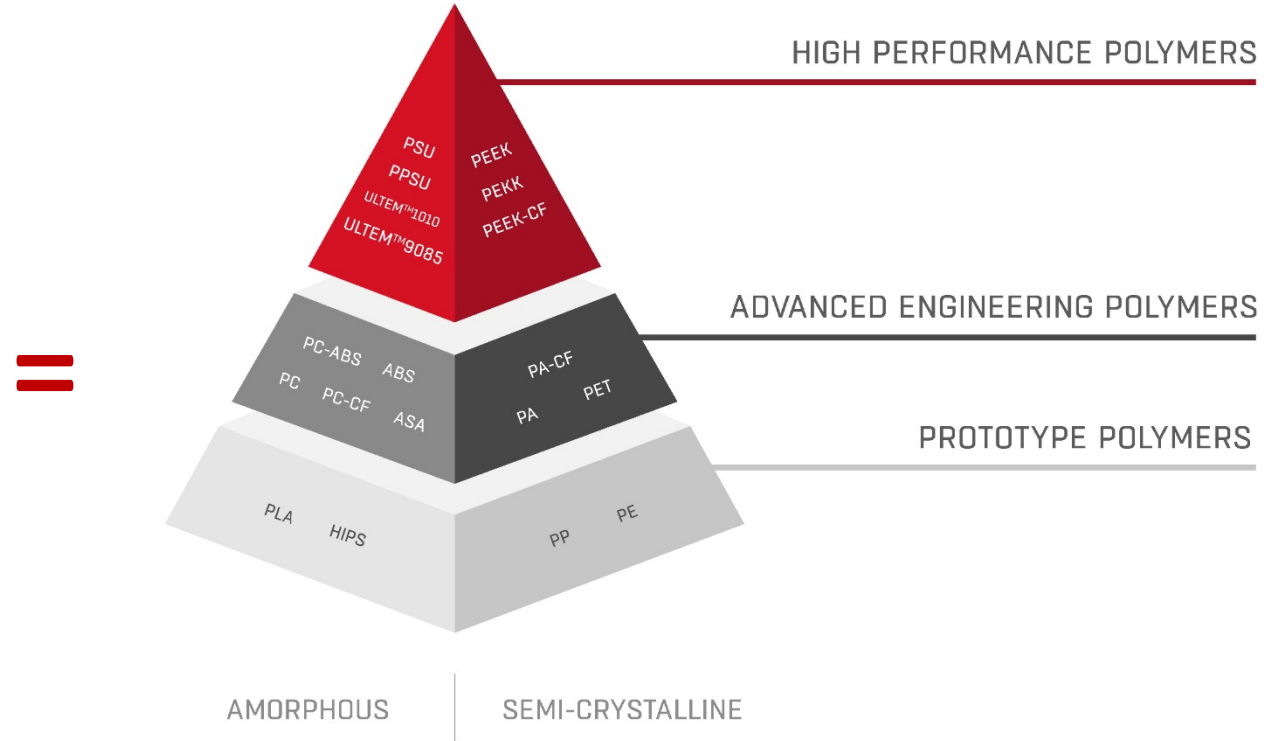
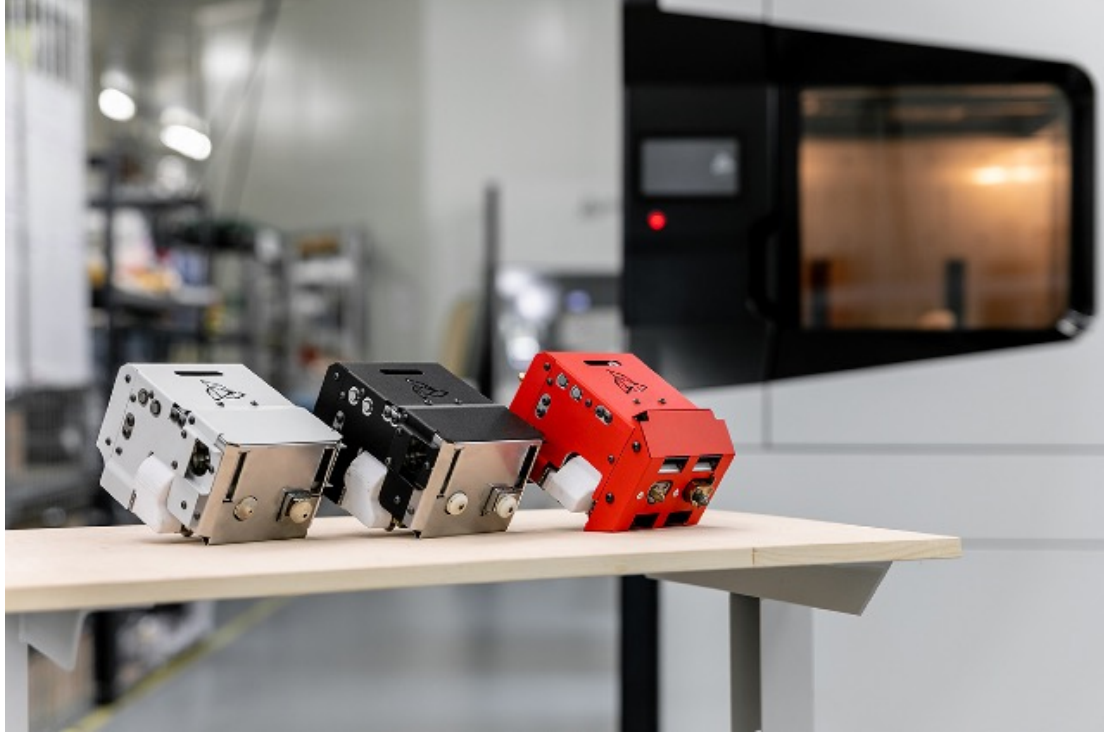
3DGence

We are a manufacturer of industrial, high-performance 3D printers, and a provider of comprehensive and innovative 3D printing solutions including professional 3D services, accessories and engineering-grade materials.

With headquarters both in the Americas, Europe and partners worldwide, 3DGence provides global coverage for our products, support, and services.



MATERIALS SEGMENTS



Engineering Polymers – When are they required?

Prototype materials are effective for initial draft, lower specification projects. Highest Performance polymers are excellent for high-temperatures and metal replacement.

In between is a "fat middle" of value of moving from prototyping to production with Engineering Grade Materials – **cost effective, higher strength, and wide variety for proof of concept and industrial grade parts.**

- Printed models that can handle functional testing (higher temperature, strength, wear, anti-corrosion)
- More cost effective than High-Performance polymers during design and proof of concept phase
- Enhanced mechanical properties
- Optimized for 3D printing process
- Wide range of material grades (PA6, PA12, PA-CF)
- Can be easily modified for specific/unique applications

Engineering grade polymers are most common used on industrial floor. When it comes to jigs & fixtures, this is the backbone of many types of industrial design projects.



Advanced Engineering Polymers

ABS/ASA - it is a machinable material, which enables the user to design the custom technological holes and threads on the printed model. ABS shows some basic chemical resistance for acids, alkalis, and alcohols. It can be used in applications that work in the temperature range of 20–80°C. ABS is highly prone to material shrinkage during the printing process.

Nozzle temp: 250°C
Chamber temp: 80°C

PC – one of the most durable engineering grade polymers. High dimensional accuracy and stability, increased rigidity, and impact strength make the material particularly suitable for the production of demanding and robust models. However, PC is a highly demanding filament to get quality prints thus it is essential to ensure consistent printing conditions, ideally in an enclosed, heated printing chamber.

Nozzle temp: 310°C
Chamber temp: 120°C

PA – has a very high tensile strength. The material is strong and has good tribological properties. The model shrinkage is very low which allows printing with high dimensional tolerances. The surface of the nylon is slippery as usually requested by the medical segment customers.

Nozzle temp: 270°C
Chamber temp: 65°C

Electrostatic dissipative (ESD) – reduced static electricity

Flame Retardant (FR) – requires advanced filtration to remove any potential harmful fumes from the printing process

Carbon Fiber (CF) – Carbon Fiber reinforced materials

Glass Fiber (GF) – Glass Fiber reinforced materials



APPLICATIONS



Fit&form test part



Functional prototypes



Casings

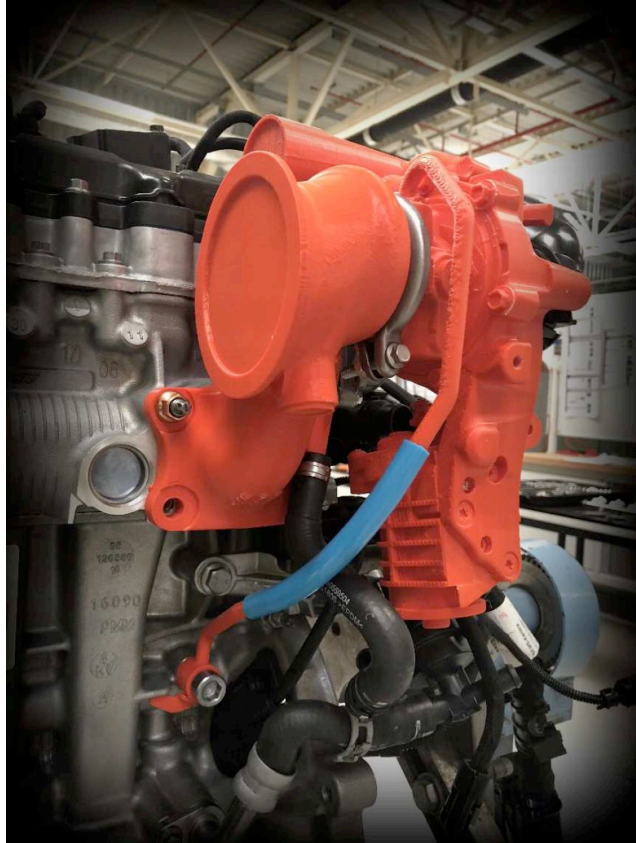


End-parts



Jigs&Fixtures

Optimization Jump: LEAD TIME REDUCTION



ABS



- Industry: Automotive
- Application: Assembly test part

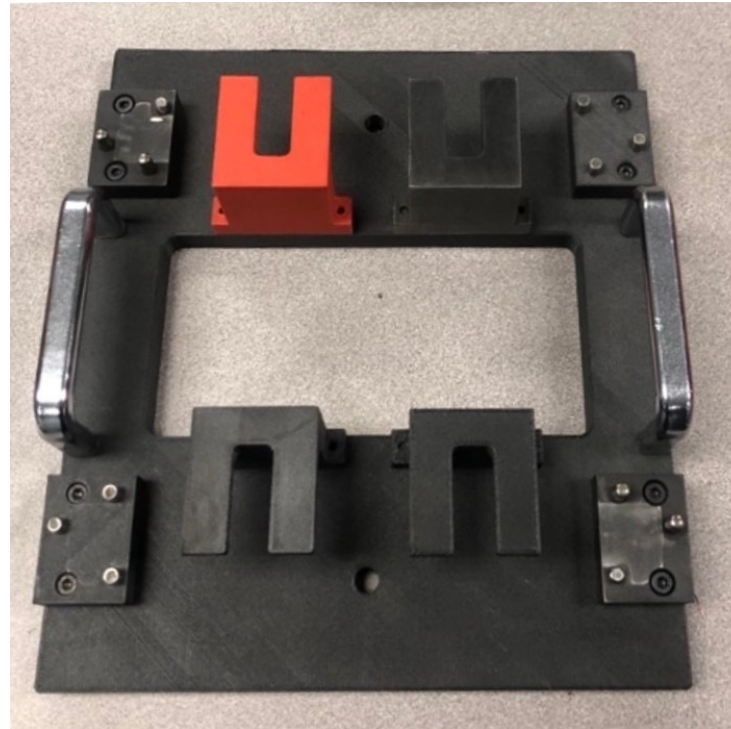


End use tooling

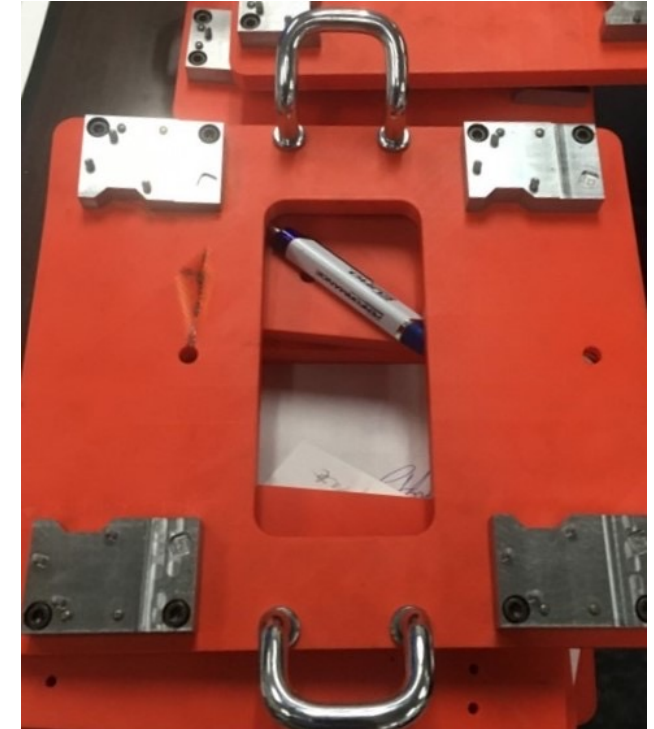
REPLACING METAL ON DEMAND

- Industry: Automotive
- Application: High-Volume Production
- Qualification time: 2 weeks

Type	Original	3DGence
Material	Steel	CF-PC, ABS
Lead Time	2 Weeks	65 hrs. (CAD to floor)
Cost	\$500 - \$700	\$25 - \$100
Additional Costs	Procurement, payment, admin	
People	3	1



PC-CF (Final)



ABS (Test)



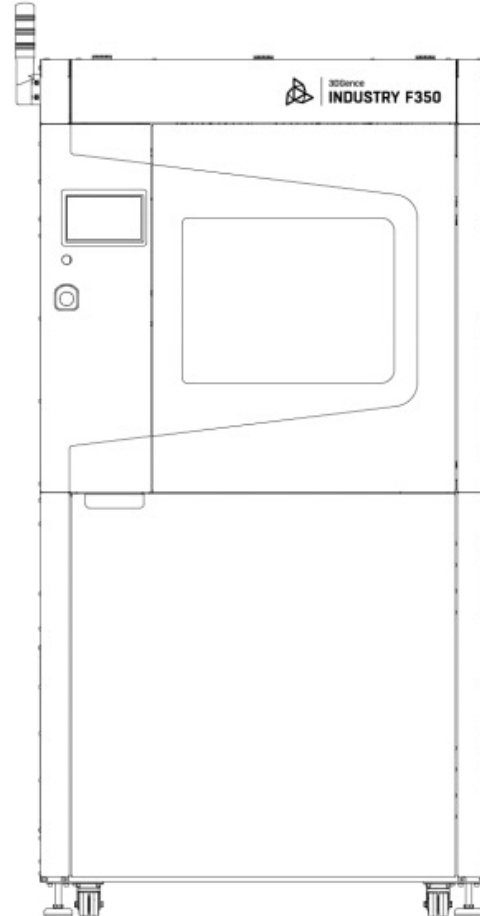
Advanced Engineering Polymers TECHNOLOGY REQUIREMENTS

Dual extruder module

Automated process control

Heated printing chamber

Industrial air filtration



Dedicated printing modules
(quick change)

Industrial Grade
Extrusion System

Heated material chamber

Dedicated build surfaces

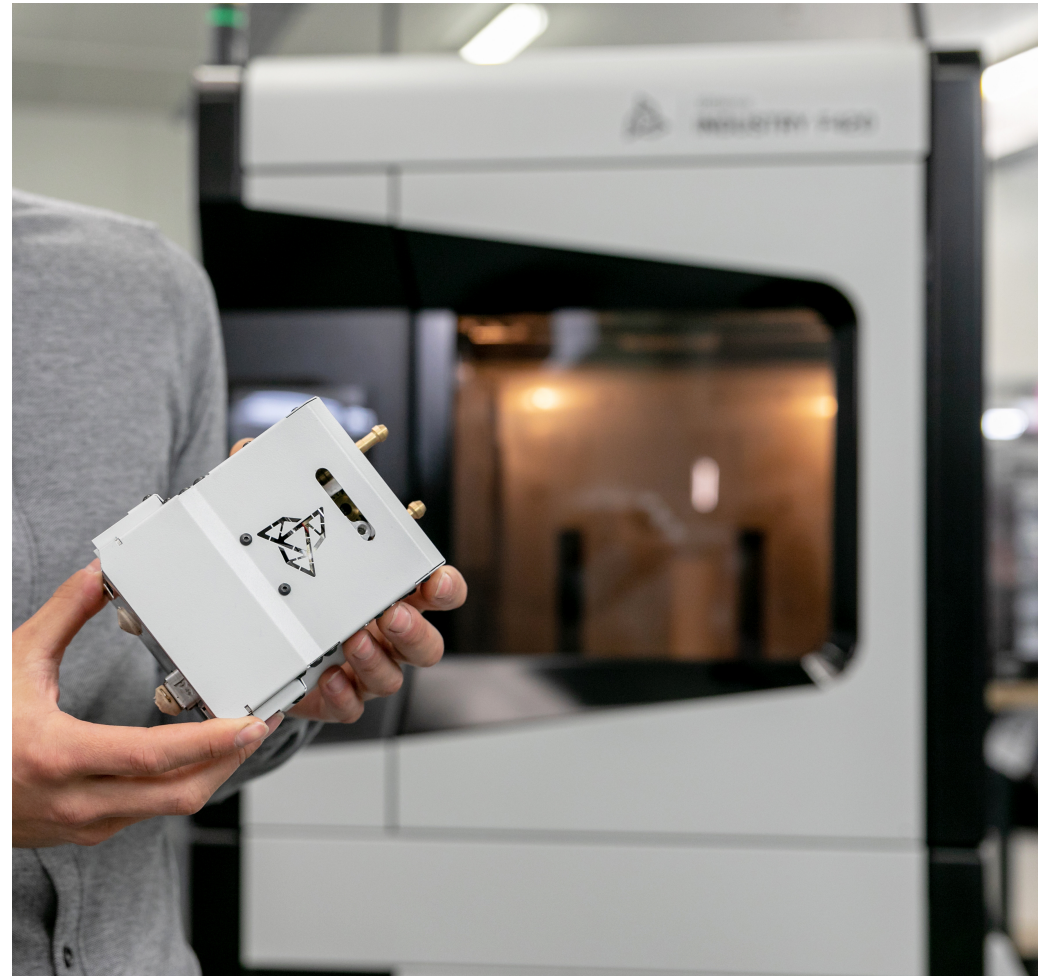


Key Enabler: DUAL HEAD MODULES

Dedicated support options are enabling:

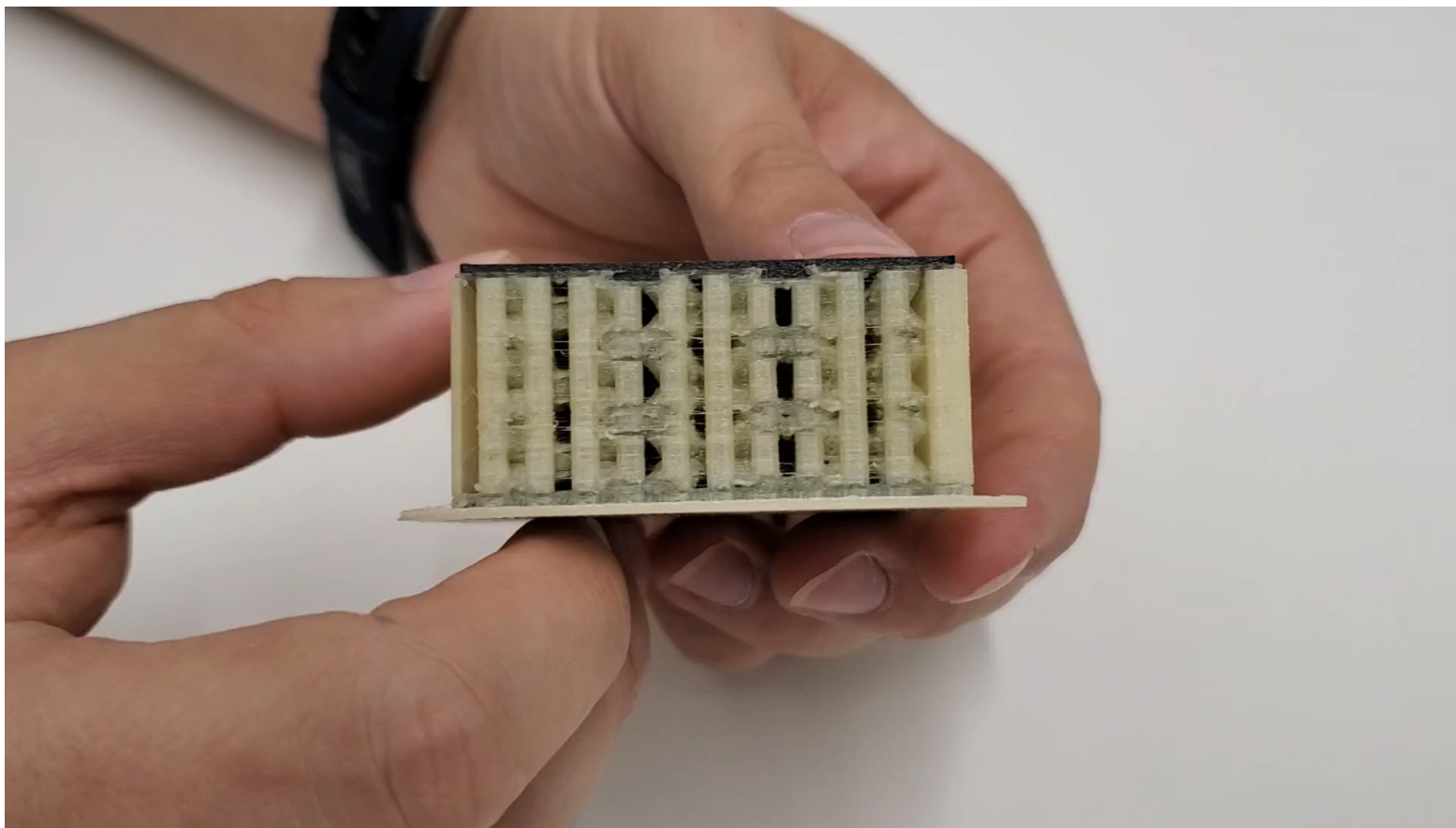
- More complex geometries and functional parts
- Enhance the productivity of multiple prints in one instance
- Throughput achieved with very little manual handling
- Dimensional stability of the model **(prevents distortion under the support)**

These benefits are some key enablers in the shift from the Rapid Prototyping to the Rapid Production.



PEEK-CF

lattice structure
with advanced support



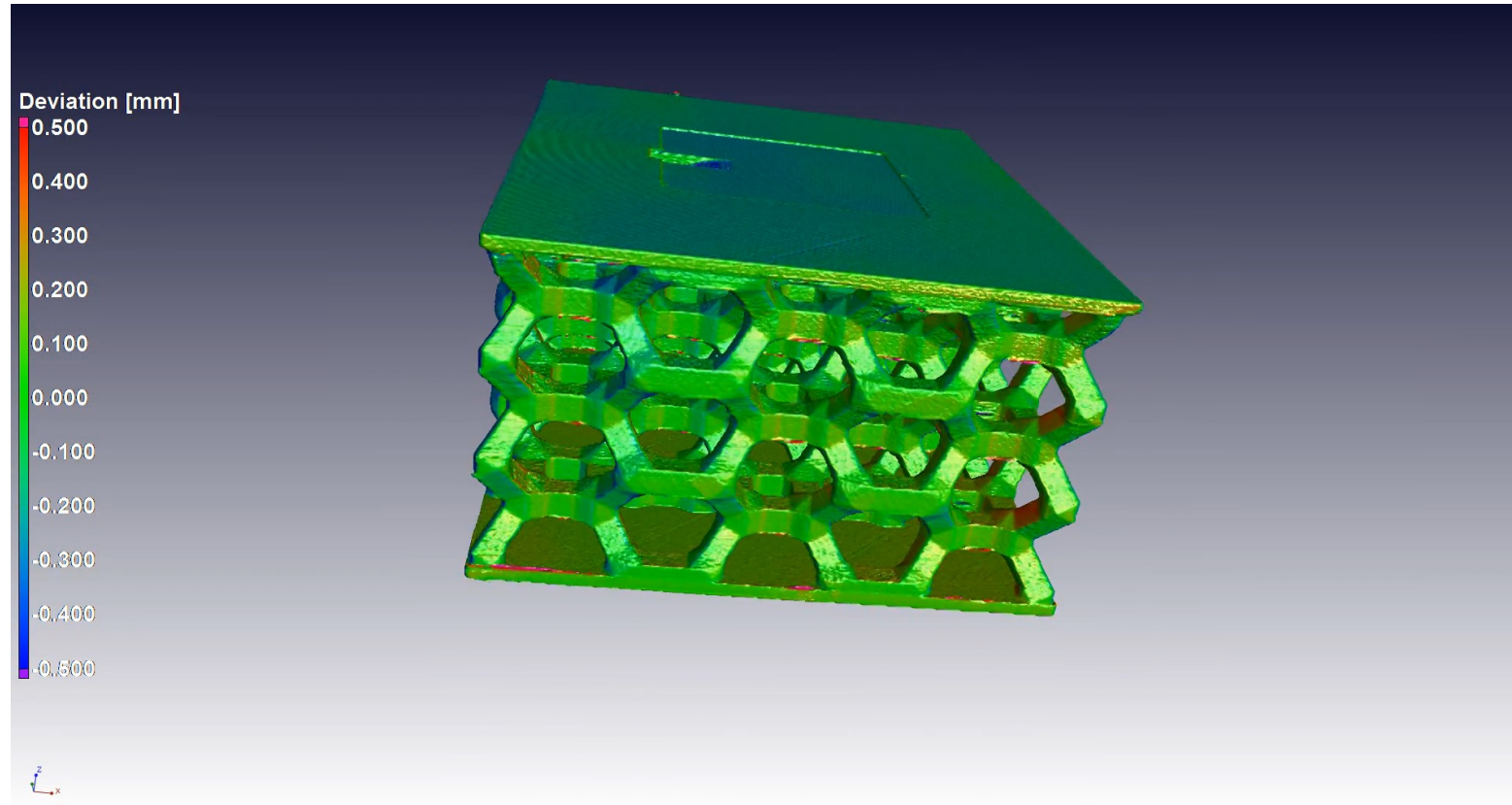
PEEK-CF

lattice after no-touch
support removal.

Process Time: 1.5 hrs



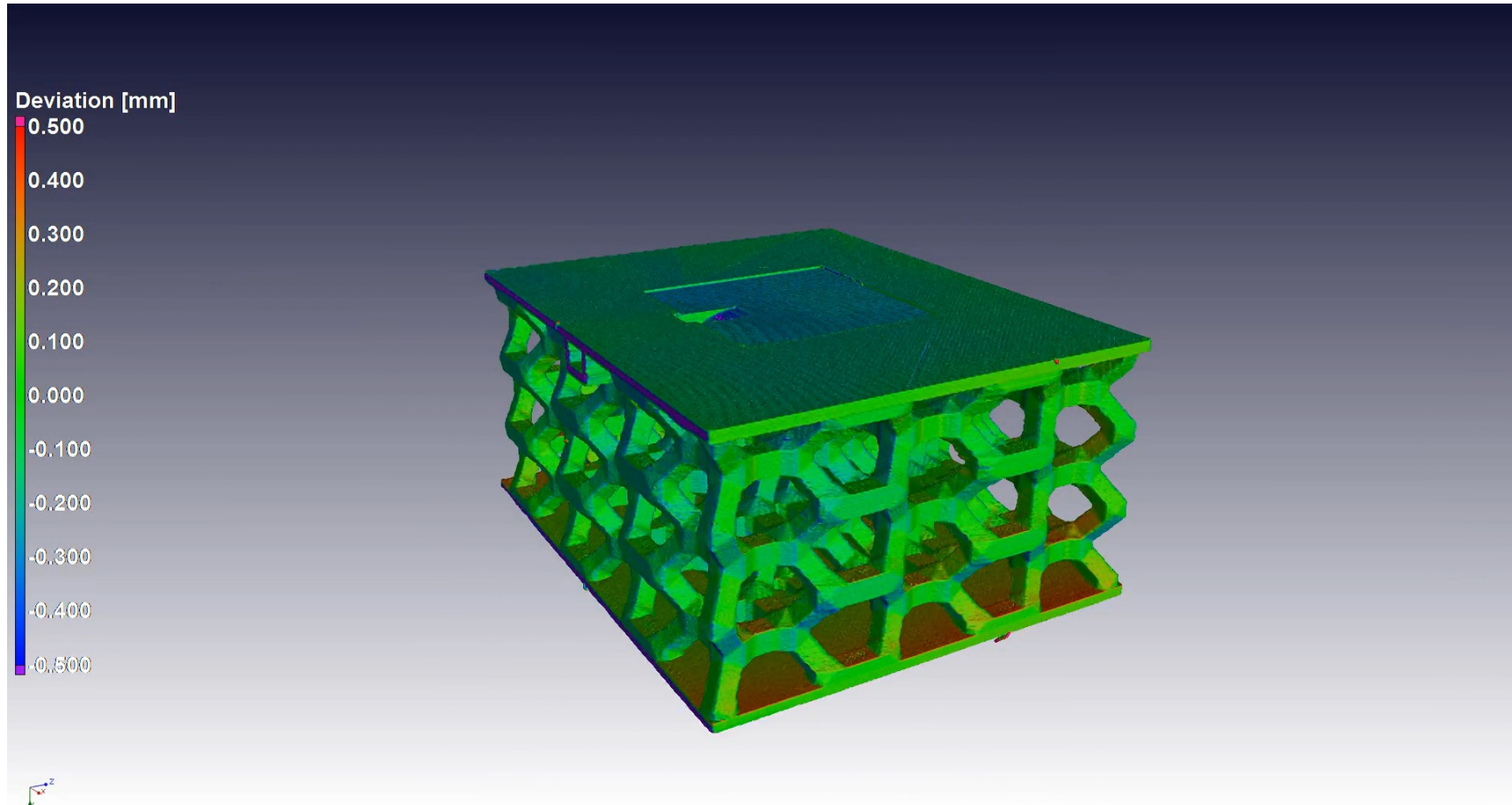
Limitation: Without advanced support



Low dimensional stability.
Accuracy varied up to 0.5 mm without advanced support



Optimization: With Advanced Support



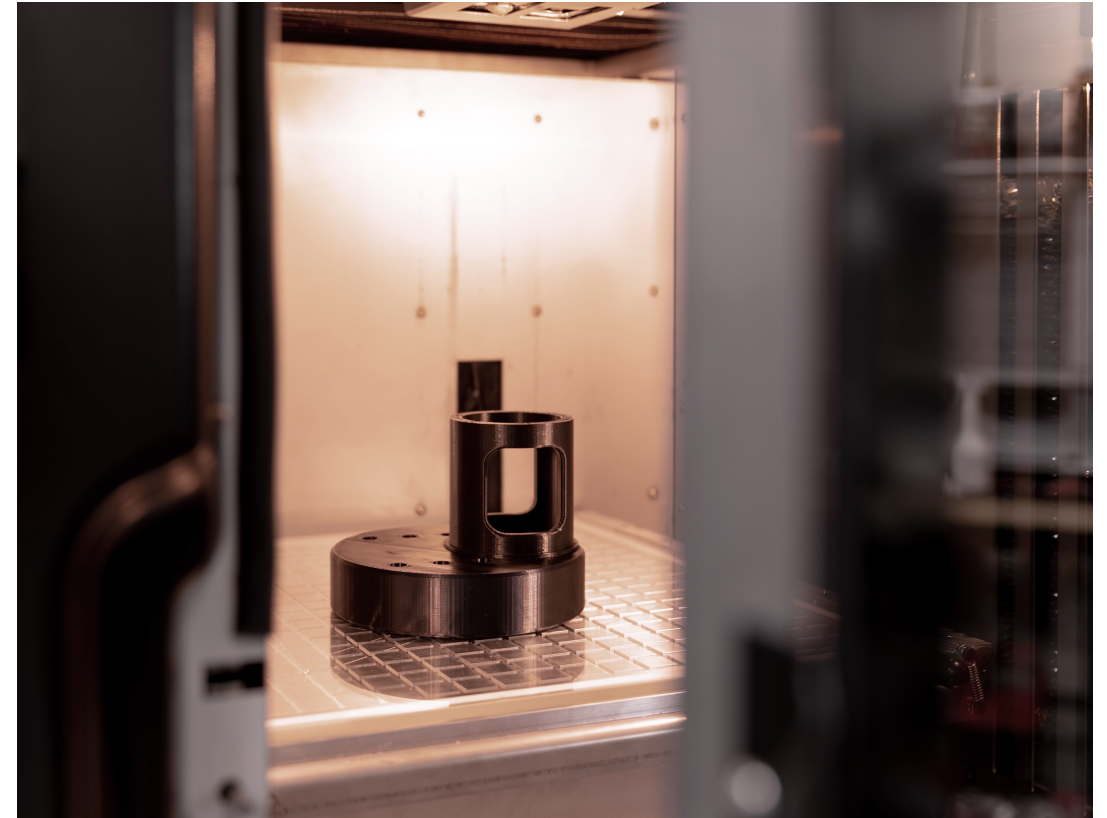
With advanced support, the dimensional stability is considerably higher and more accurate



Fully Enclosed Heated Chamber

HOW IT IS DIFFERENT & IMPORTANT

- **Enhanced mechanical properties** – printing in optimal environment conditions dedicated for each model material. This requires an advanced technology to maintain constant temperature.
- **Dimensional stability** – Uniformly heated chamber executes dimensional accuracy even while printing multiple objects across the build plate.
- **Repeatability** – Despite different outside factors (external temperature), an enclosed heated chamber ensures the same printing conditions guaranteeing the same results every time.
- **Safety** – An enclosed chamber with advanced filtration systems reduce fumes and pollutant emission
- **Convenience** – printer can be placed where there is circulating air, cooler temperatures (medical/lab), or flowing air conditioning



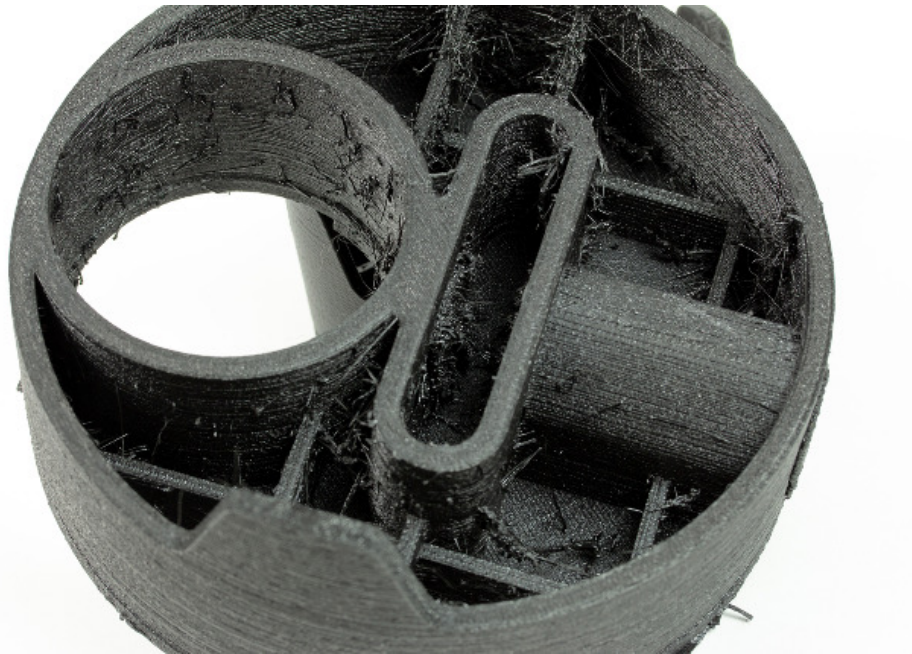
Heated material chamber

Beyond Visual Quality

Mechanical Properties

Print Success Rate

Dimensional Stability



PA6-CF material not dried properly



PA6-CF material with proper handling

How to choose material and 3D printer?

Material

- What are the application requirements?
- Should the material have any special features?
- Who is the manufacturer of the material?
- Check the required printing conditions?

Printer

- Evaluate 3D printers based on required material processing conditions, keep in mind that it should additionally:
- Be easy to use and calibrate – labor and time saving
- Little to no daily maintenance
- Have safety features like, advance filtration or enclosed locked chamber to ensure operator safety
- Has big enough working area which will enable big prints or batch printing
- Flexible system
- Ask for sample





NEW INDUSTRIAL 3D PRINTER

3DGence
INDUSTRY F350

3DGence INDUSTRY F350

Dedicated printing modules
(quick change)

Dual extruder module

Automated process control

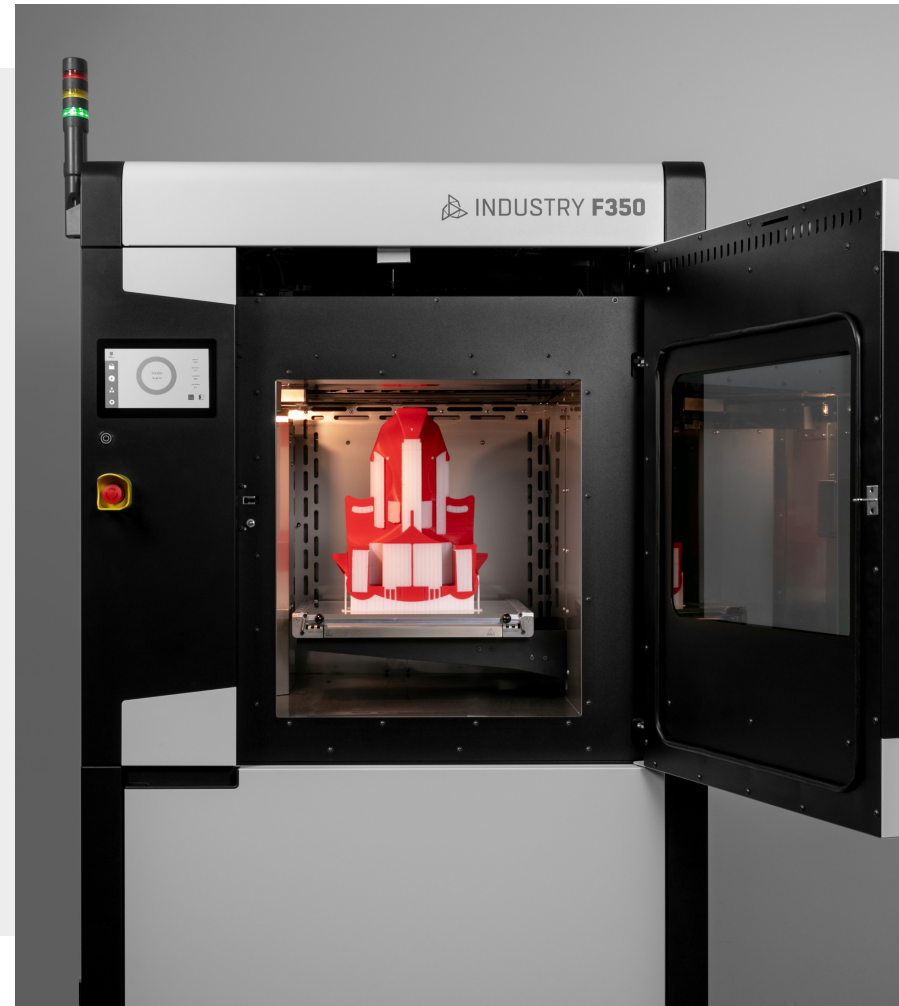
Industrial Grade Extrusion System

Heated printing chamber

Heated material chamber

Air filtration

Dedicated build surfaces



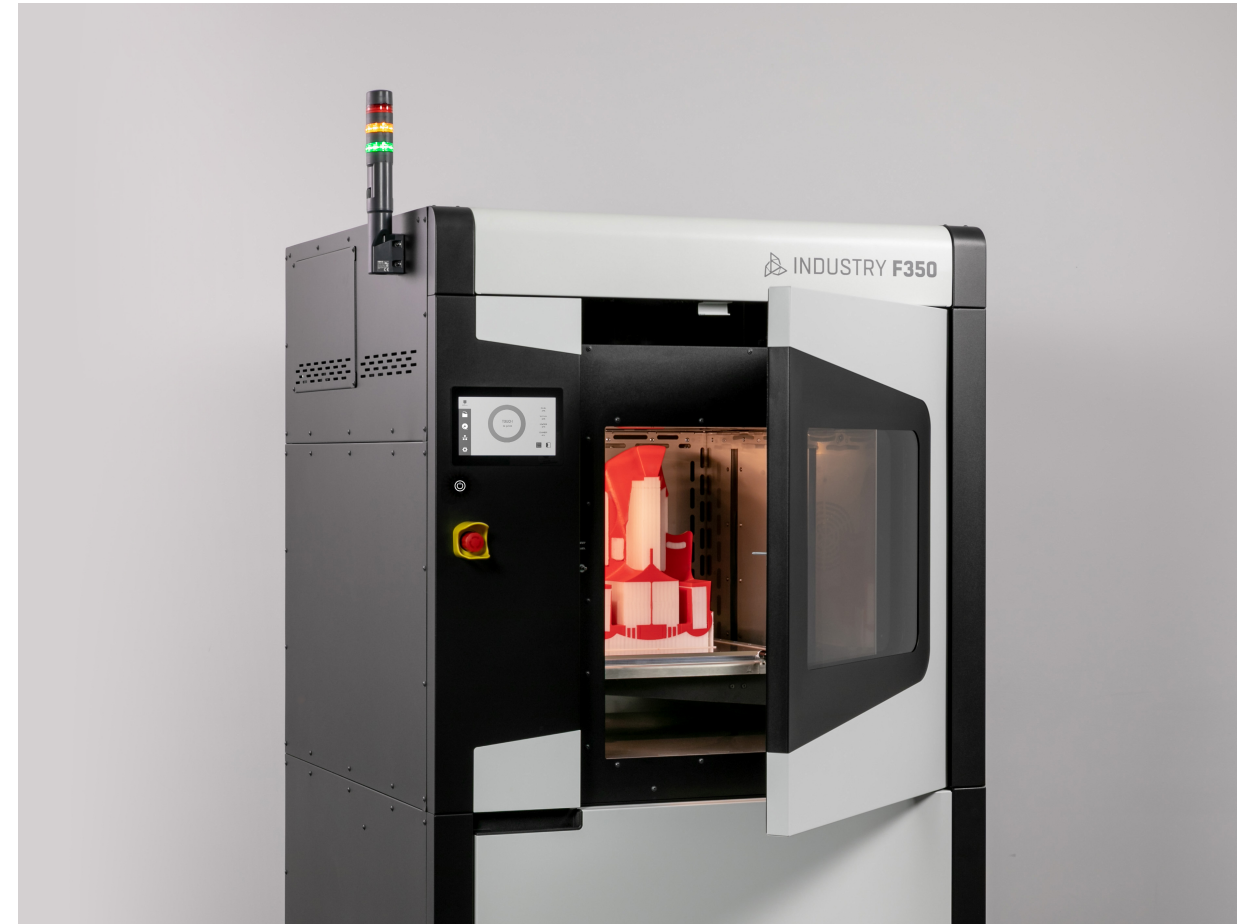
3DGence

INDUSTRY F350

Dual extruder 3D printer designed for industrial applications where accuracy, speed, comfort and safety of the entire 3D printing process are crucial.

This 3D printer is suitable for working with a wide range of technical materials including the high-performance thermoplastics.

SPECIFICATION	
Build volume (w × d × h)	340 × 340 × 350 mm
Printing nozzles	2 per module
Hotend temp. (max)	500°C
Table temp. (max)	160°C
Chamber temp. (max)	130°C
Filaments	PLA, ABS, ASA, PA, PA-CF, PC, PEEK
Software	3DGence SLICER 4.0 and 3DGence CLOUD

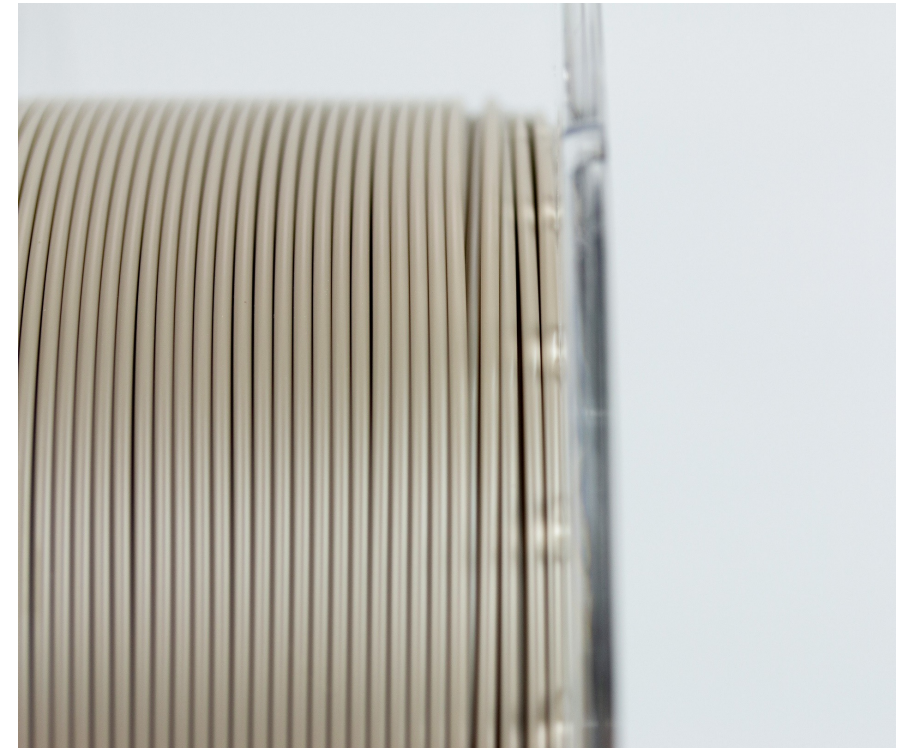


3DGence

UPCOMING NEW MATERIALS

- ABS-FR
- ABS-ESD
- PC-CF
- PC-ESD
- PEEK-CF

Victrex™ AM 200 PAEK



DESIGNED & OPTIMISED FOR 3DP
VICTREX™ AM 200 PAEK FILAMENT



