

Additive Manufacturing: Where Innovation Takes Flight

Build everything from performance tooling and fixtures to flight-ready production parts, with access to composites, continuous fiber reinforcement, and metal at the push of a button.

Functional Parts from Factory to Flight

+ **Get to Market Faster**

With the ability to rapidly prototype and produce functional end-use parts in-house, Markforged technology accelerates the development cycle for aerospace innovations, eliminating lengthy lead times associated with traditional manufacturing and outsourcing.

+ **Reduce Inventory Costs**

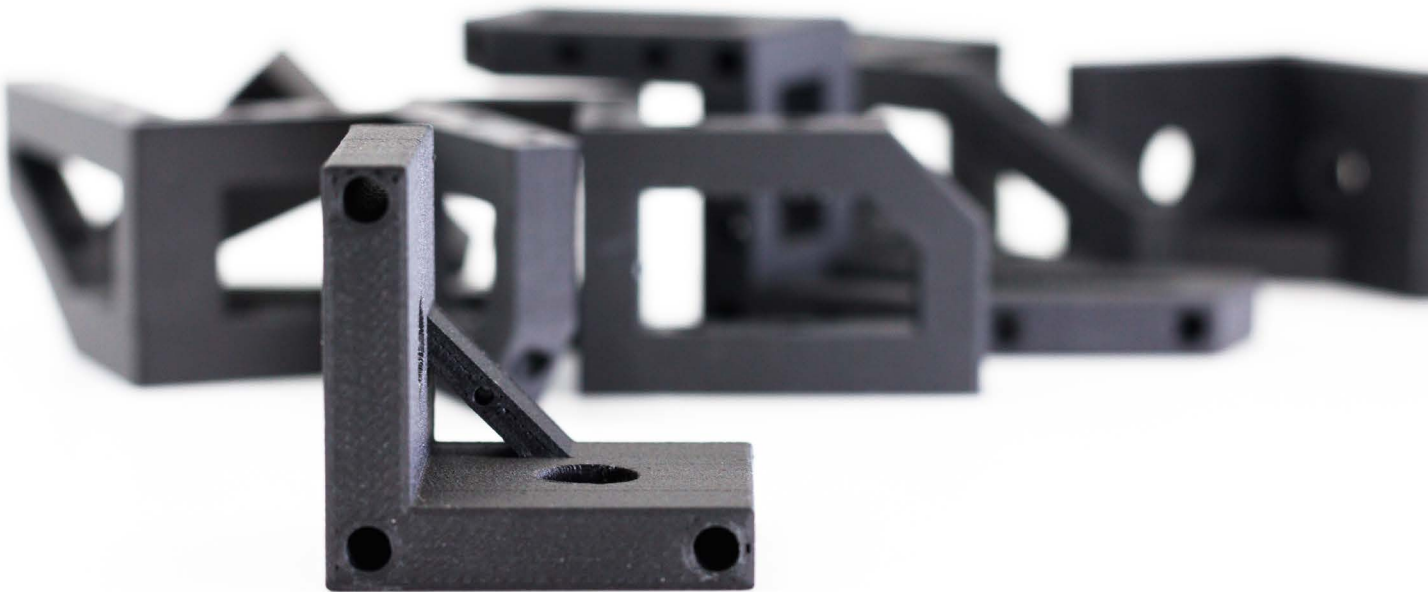
Implement just in time manufacturing to avoid minimum order quantities, minimize inventory holding costs, and reduce overall part costs.

+ **Resolve Line Down Situations as Quickly as Possible**

Keep your manufacturing lines up and running by fabricating tooling or MRO on demand without any significant investment in tooling or labor.

+ **Lights Out Production**

Maximize your technology utilization with true 24/7 manufacturing. Automated material changeover keeps printers running with minimal operator intervention, enabling continuous production and greater operational efficiency.



Why Markforged?

+ **Production-Ready Performance**

Precision-designed, sensor-driven machines deliver breakthrough reliability and performance with a simple user experience.

+ **Ready-to-Use, High-Performance Materials for Aerospace**

Produce end-use aerospace parts with high-performance composites and polymers, Vega™, ULTEM™ 9085 Filament, and Onyx FR-A™, built in our ISO 9001 certified facility to meet aerospace standards, enabling you to reliably go from print to part. Enhance your prints with continuous Carbon Fiber to create lightweight components that match the strength of aluminum while requiring minimal post-processing.

+ **Accelerate Qualification for Critical Aerospace Applications**

Leverage high-performance materials with full traceability, including NCAMP¹-qualified Onyx FR-A on the X7 printer. Markforged supports your path to qualification with guidance to validate printers and materials for regulated environments. Our comprehensive Technical Qualification Guide² and team expertise will help you navigate industry requirements, with experience supporting major aerospace programs. Additionally, Markforged's integration with industry-standard FEA solvers allows for simulation-driven design validation, taking into account material and process properties.

+ **Scale Securely, Protect Your IP**

Our On-Prem solution operates 100% offline in restricted environments, ensuring sensitive data never reaches the cloud. This protects your IP by keeping print files locked to your printers. Our ISO 27001:2013 certification showcases our dedication to enterprise-grade data security.

Markforged's industrial-grade FX20, FX10, and X7 printers are ideal for aerospace manufacturers. It combines high-speed, large-format printing with high-performance materials, including ULTEM™ 9085 Filament, Vega (PEKK-based), Onyx FR-A, and continuous Carbon Fiber to produce strong, lightweight, flight-ready components.



Flight-Ready Materials

+ Vega™

Vega (PEKK) filament, engineered for the FX20™, delivers high-temperature performance and a smooth matte black finish. It offers excellent reliability and can be reinforced with Carbon Fiber HT-A for aluminum-strength parts. Vega is traceable, FST compliant, and perfect for high-performance aerospace components.

+ ULTEM™ 9085 Filament

ULTEM™ 9085 Filament is a high-temperature PEI thermoplastic with a high strength-to-weight ratio, excellent thermal stability, and excellent FST characteristics. Usable in production aerospace applications, ULTEM™ Filament brings Markforged's CFR technology to a new realm of parts.

+ Onyx FR-A™

Onyx FR-A is a UL Blue Card certified flame-retardant material, rated V-0 (self-extinguishing) at 3mm or thicker. Fully traceable and NCAMP¹-qualified on the X7, it's perfect for aerospace flight hardware and tooling. Reinforceable with Carbon Fiber FR-A.

+ Carbon Fiber (available in HT-A and FR-A)

Carbon Fiber from Markforged is a high-strength continuous fiber that produces parts as strong as 6061-T6 aluminum when combined with a composite base. The Carbon Fiber HT-A variant works with Vega™ and ULTEM™ 9085 for reliable performance in demanding applications. Carbon Fiber FR-A pairs with Onyx FR-A to create strong, lightweight parts that meet FST requirements for flame-retardant needs.

1. NCAMP Certification [here](#)

2. Technical Qualification Guide available soon