



Le seul moyen d'obtenir des pièces de qualité industrielle en quelques heures, et non en quelques semaines - le X7 permet aux ingénieurs et aux concepteurs d'améliorer fondamentalement leurs opérations de fabrication à la vitesse de la lumière.

Résistance de la fibre de carbone

La X7 imprime en 3D des pièces continues de carbone en quelques heures qui sont solides - et capables de remplacer l'aluminium usiné.

Pièces fonctionnelles de tous types

Quelles que soient vos exigences fonctionnelles - résistance aux flammes, aux produits chimiques, absorption d'énergie, haute résolution, pièces d'ébauche - le X7 dispose d'un matériau industriel ou d'un mode d'impression capable de fabriquer une pièce fonctionnelle pour vous.

Fiabilité industrielle et précision

Matériel usiné avec précision, capteurs avancés et logiciels uniques fiables. Seules les imprimantes 3D industrielles Markforged offrent un balayage laser au micron près pour une boucle fermée, produisant de manière fiable des pièces avec une répétabilité de 50 µm et une finition de surface à la pointe de l'industrie.



Print the Future

www.3dz.fr

Print with Markforged's full range of Composite Base materials and Continuous Fibers.



Onyx

Micro carbon fiber filled nylon that forms the foundation of Markforged composite parts

Onyx — our flagship Composite Base material — is a micro carbon fiber filled nylon that yields accurate parts with impeccable surface finish. Few materials have the versatility of Onyx; it offers high strength, toughness, and chemical resistance when printed alone, and can be reinforced with Continuous Fibers to yield aluminum-strength parts. Today, there are more than a million Onyx parts in the field transforming manufacturing.



Onyx FR

Certified UL 94 V-0 rated flame-retardant micro carbon fiber filled nylon

Onyx FR is a flame-resistant variant of Onyx designed for use in applications where parts must be non-flammable. The material earned a UL Blue Card, and is considered V-0 (self extinguishing) at thicknesses greater than or equal to 3mm. It can be reinforced with any Continuous Fiber and is compatible with industrial composite 3D printers.



Onyx ESD

Stronger, stiffer, and ESD resistant Onyx variant for industrial applications

Onyx ESD is the most advanced polymer we've ever developed. It's precision-engineered to possess an extremely tight range of surface resistance — meeting ESD-safe requirements of the most stringent manufacturers — while offering the same industry leading benefits that Onyx offers. In fact, it's actually stronger and stiffer than Onyx with similarly impeccable surface finish, making it the go-to material for advanced applications.

Applications

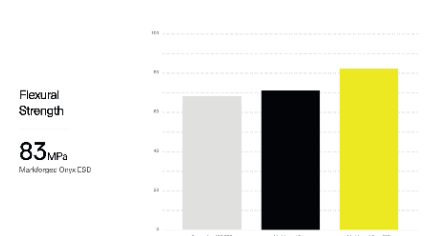
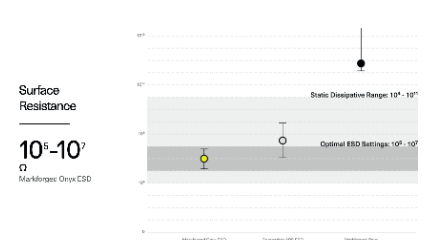
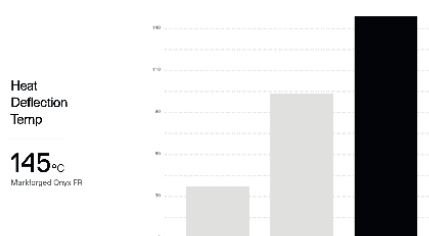
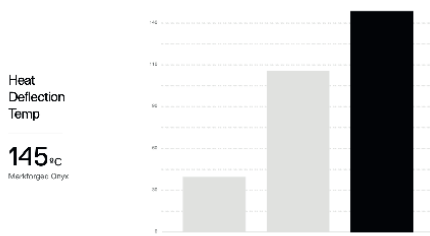
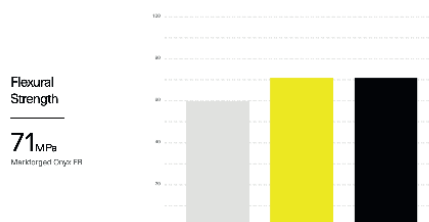
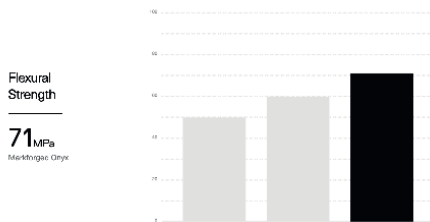
- Plastic Part Replacement
- Housings
- Sensor Mounts
- Cosmetic Prototypes

Applications

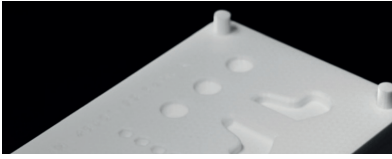
- Weld Fixturing
- Aerospace Clips & Brackets
- Laser Marking Fixtures
- Energy/Electrical Brackets & Fixtures

Applications

- Vacuum Grippers
- Transfer Tools
- Pick and Place
- Transfer and Packaging Trays
- Electronics Enclosures



Print with Markforged's full range of Composite Base materials and Continuous Fibers.



Nylon

Smooth engineering thermoplastic that can be easily painted or dyed

Nylon is an unfilled thermoplastic. It's a non-abrasive material that is great for ergonomic surfaces and workholding for pieces that are easily marred. It can be painted or dyed.



Fiberglass

Entry-level Continuous Fiber for industrial applications

Fiberglass is Markforged's entry-level Continuous Fiber—a material capable of yielding parts 10x stronger than ABS when laid into a Composite Base material like Onyx. Fiberglass is the flagship material of the Onyx Pro and X5 and printable on the Mark Two and X7, providing a more affordable alternative to Carbon Fiber.



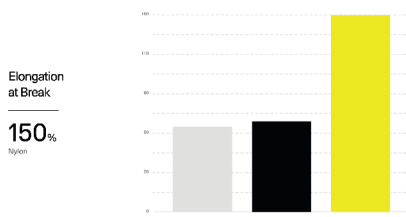
HSHF Fiberglass

Thermally resistant Continuous Fiber for strong parts in high-temperature environments

High Strength High Temperature (HSHF) Fiberglass is defined by two characteristics: high strength (nearly equal to 6061-T6 Aluminum) and strength in high temperatures. Though not as stiff as Continuous Carbon Fiber, Onyx parts reinforced with HSHF are strong at both low and high temperatures. As a result, HSHF reinforcement is best used for parts in high-temperature environments like molds, autoclaves, and others.

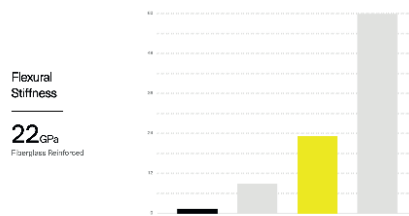
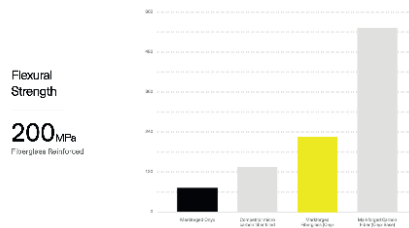
Applications

- Ergonomic Tools
- Assembly Trays
- Cosmetic Parts



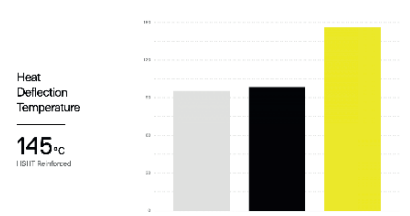
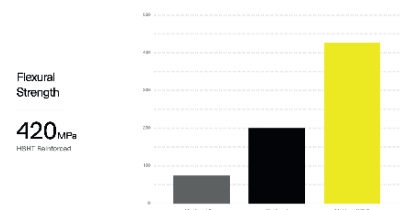
Applications

- Softjaws
- Medium-Strength Tooling
- Insulative Reinforcement
- Hand Tools



Applications

- Polymer Molds
- Prototype (Low-Run)
- Injection Molds
- High-Temperature Fixturing
- High-Temperature Prototypes



Kevlar

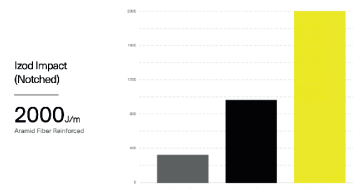


Tough, highly compliant Continuous Fiber for high-impact applications made with Dupont™ Kevlar® Fiber.

Aramid Fiber is a Kevlar® based, specialized Continuous Fiber known for its energy absorption and extreme toughness. When laid into Onyx or another Composite Base material, it yields extremely impact-resistant parts that are nearly immune to catastrophic failure (fracture).

Applications

- End-of-Arm Tooling
- Stanchions, Cradles, & Supports
- Delrin® Part Replacements
- Wear Stops



Carbon Fiber

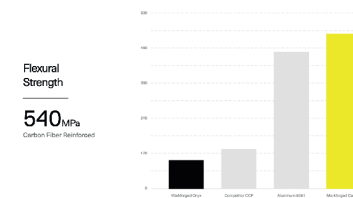


The backbone of aluminum-strength composite parts

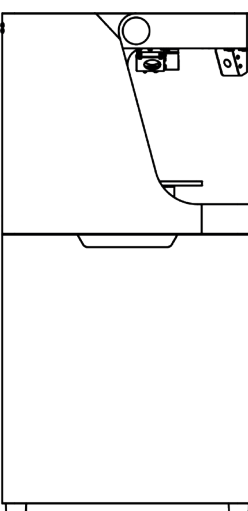
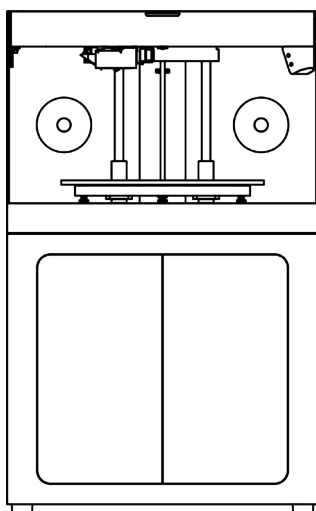
Carbon Fiber is Markforged's unique, ultra-high-strength Continuous Fiber – when laid into a Composite Base material like Onyx, it can yield parts as strong as 6061-T6 Aluminum. It's extremely stiff and strong, and can be automatically laid down in a wide variety of geometries by Markforged 3D printers.

Applications

- High-Strength Tools & Fixtures
- Brackets & Mounts
- Inspection/CMM Fixturing
- Bespoke End-Use Parts
- Functional Prototypes



The Markforged X7 CFR industrial 3D printer combines precision-built hardware, advanced sensors, and best-in-class software to deliver accurate parts repeatably.



Printing Process

Continuous Fiber Reinforcement (CFR)

Z Layer Resolution

50 μ m - 250 μ m

Printing Media

Composite Base Filaments, Continuous Fibers

Internal Part Geometry

Closed Cell Infill with Continuous Fiber Reinforcement

Physical Dimensions Build Volume

Width – 584 mm
Depth – 483 mm
Height – 914 mm
Weight – 48 kg

Width – 330 mm
Depth – 270 mm
Height – 200 mm

Print Bed

Precision Ground Composite



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