Make Radically Better Bra Cups & Apparel

Powered by **Carbon**

Why Carbon for Bra Cups & Apparel?

Increase breathability with air-permeable, open-cell lattice structures

Distribute pressure through interconnected lattice struts

Promote size inclusivity by engineering the same fit and feel across all sizes

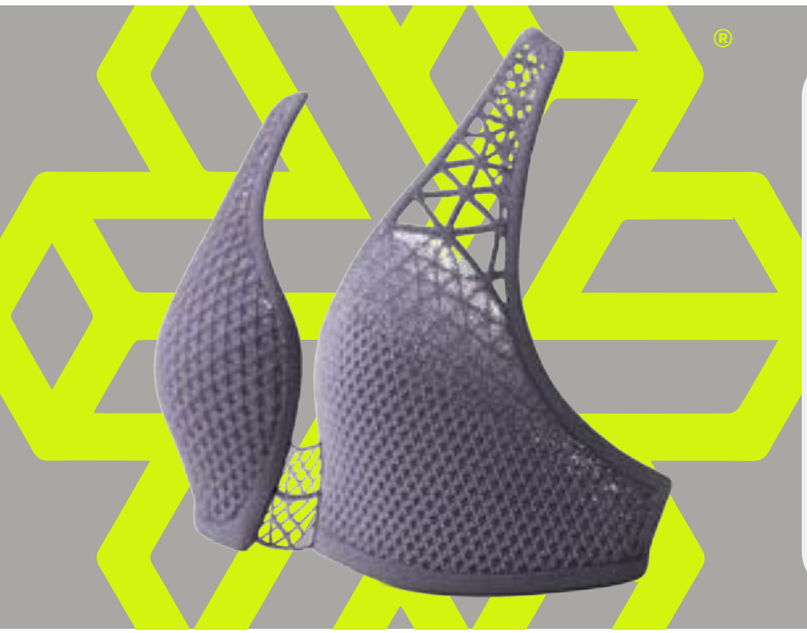
Resist fatigue, deformation, and wear by using Carbon's wash-tested EPU materials

Design protective lattices that keep athletes safe without restricting key movements

Incorporate latticed protection that enables greater airflow instead of insulating the athlete

Leverage Carbon's naturally anti-microbial EPU materials

Get to market quickly by reducing product development cycles with the Carbon platform



Design Insights for Bra Cups:

• Incorporating 3D printed lattice designs can improve breathability and dry time compared to traditional foams.

• While traditional bra cups use generic polyurethane foam to provide padding and support, a bra cup produced on the Carbon platform can distribute pressure evenly through interconnected struts, avoiding pressure concentration in a single area and enhancing support and comfort.

• Tailoring stretch and lockout in specified latticed zones across a bra cup can eliminate the need for additional elastics and stabilizers.

Use Case: Phoenix Hipwear Revolutionizes Hip Protection with Carbon Technology

Phoenix Hipwear used the Carbon platform to design and develop a new kind of hip protection for active adults at risk of fracture. Unlike traditional, bulky foam shields designed for a more senior and sedentary population, the new shields are thin, flexible, and breathable, making them comfortable to wear during activities like hiking, biking, and playing sports. Utilizing Carbon's 3D-printing technology, they produced a lightweight, high-performing design that passed rigorous impact tests. This innovation has successfully expanded hip protection to a younger, more active demographic who previously found existing products unusable.

> *This is a paradigm shift! Moving from bulky foam shields housed in unattractive, medical-style garments, our new Phoenix Hipwear shield is slim, breathable, and flexible, held in place in the pockets of stylish sports shorts that can be worn on their own or under leggings or any other clothing. This is hip protection to be excited about!*

Natasha Williams Founder & CEO, Phoenix Hipwear

Powered by Carbon

MATERIALS

• **EPU Pro:** High-performance elastomer with expanded range of durometers and novel haptics

• **EPU Pro Expand:** Silky haptics with inherent matte finish for high-quality products

• **EPU 46:** Tunable softness, faster print time, stiffer build, 40% bio-based, and can be printed in a variety of colors

• **EPU 45:** Energy damping and strain-rate-sensitive for peak impact zones

CARBON DESIGN ENGINE™

Carbon Design Engine™ online software empowers designers to make precisely tuned, high-performance latticed padding and other components for products like saddles, helmets, and insoles. It reduces and usually eliminates the need for the tedious, manual editing of struts or structures post-generate and automatically resolves lattice features, both large and small, while robustly transitioning between different zones inside the same part for tunable performance.

CUSTOMIZATION

Carbon's methodology enables rapid and efficient production of customized parts tailored to each user. With Carbon's workflow-driven approach, customization can be automated, making it accessible and feasible.

DIFFERENTIATION

The Carbon platform can produce a wide range of designs, which enables you to make your product stand out, whether it's a distinct performance result or a unique aesthetic using textures or lattices.

GET FROM IDEA TO PRODUCTION – FAST

With the Carbon platform, you can iterate rapidly and print a new version without having to change tooling. Because you can prototype with the same materials used in the final product, you can start printing production parts as soon as your design is ready.

CPN

The Carbon Production Network (CPN) is a global ecosystem of leading industry design firms and contract manufacturers who are experts in the Carbon idea-to-production platform. Find a CPN partner based on your needs and leverage the power of the Carbon platform to design, develop, and produce radically better products.

Tried & Tested per ASTM D737-18 (R2023), ATCC TM197-2011e2(2018)e, AATCC TM135-2018t, AATCC TS-008, 2025*

TRIED AND TESTED*:

• **Air Permeability:** EPU Pro lattices showed a 6x - 13x breathability improvement over traditional foam and spacer fabric.

• **Wicking & Dry Time:** EPU Pro is a non-absorbent material, which can lead to quicker dry times.

• **Wash Testing:** EPU Pro passed standard wash testing with a score of 4.5 out of 5.

SUPER STATS:

• **6 of the top 10** finishers in the Tour de France '25 rode saddles produced on the Carbon platform.

• **6 of the top 8** helmets rated safest by the NFL in '25 feature Carbon technology in their latticed helmet.

• **Over 20% of helmets in the NHL** utilize Carbon technology.

• **Millions of midsoles** printed for adidas shoes.

WANT TO GET STARTED?

Reach out to:

apparel@carbon3d.com

to learn more.

FIND A CPN PARTNER

Carbon®

Carbon, Inc.
1272 Borregas Ave,
Sunnyvale, CA 94089
+1 650.285.6307

www.carbon3d.com