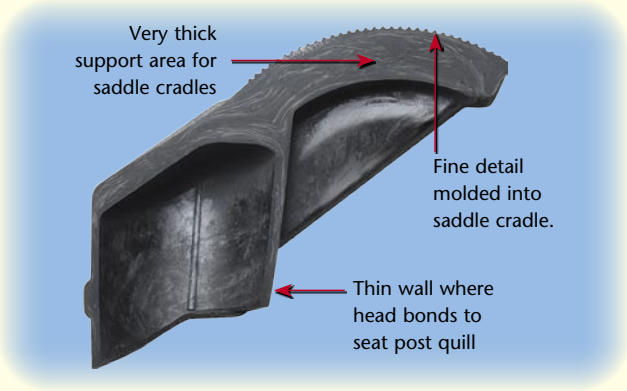
Easton Matrix Composite Technology

Highly-detailed, three-dimensional shapes with complex geometry

Fabricating carbon composite tubes is becoming almost commonplace. But what happens when the component isn't a tube? Get ready to enter a brave, new dimension in carbon composite fabrication — Easton Matrix Composite (EMC).

Fine detail and wide variations in the thickness of cross-sectional areas are not possible with traditional methods of composite fabrication.



To make a high-strength composite component such as a seat post head with vastly differing cross sections and areas of fine detail, you need a different, more advanced process.

Injection molding is a process that can create fine detail and wide variations in wall thickness, but injection molded components lack strength. The process used to create EMC components is superior to injection molding in that it allows the use of a new long-fiber carbon composite material. This new process, called compression molding, can be thought of as a 3-D forging of composites.



Easton Matrix Composite is comprised of a resin matrix and extra-long, interlocking graphite fibers. The proportion of carbon fiber is nearly identical to the proportion of pre-prepg fiber found in Easton's super-strong handlebars.

Compression molding is unique in that it allows fine detail to be molded into a component that is made of 60% carbon fiber. The 60% fiber-to-resin ratio of EMC is nearly identical to the resin ratios of pre-preg materials used in the manufacturing of existing carbon-fiber components.

The Matrix Method

EMC's long fibers are distributed uniformly throughout the mold cavity under heat and extreme pressure. The resulting component has interlocking whole carbon fibers that benefit from continuous reinforcement (CR).

A good example of a CR is the combination of rebar and concrete. When reinforcing concrete structures such as bridges, buildings or walls, builders pour wet concrete around a skeleton of long steel bars (rebar) and allow the concrete to harden. This continuous reinforcement yields greater strength properties because both materials are sharing the load. This is also the magic of Easton Matrix Composite.

The part that comes out of the mold is made of the same materials that are used in Easton's legendary composite handlebars and seat posts, unadulterated and without fillers.



Now it's possible to create highly-detailed, three-dimensional shapes with complex geometry and differing cross sections like this EC90 seat post head — without sacrificing strength.