



## **XETIC TECHNOLOGY FAQ**

### **Q. How did XETIC come to life?**

A. PUMA's Innovation team had been interested in the study of metamaterials; materials that are engineered to have properties not found in naturally occurring materials. Understanding the functional needs of a midsole (especially running), their intuition told them that this is an opportunity to create something unique, functionally and visually.

### **Q. What is special about how XETIC functions?**

A. XETIC combines foam cushioning with mechanical cushioning. This provides a layered system that is programmed to create breakthrough properties. It has a feel to it that PUMA calls "deep cushioning". That means, it has a great step in comfort as well as the right hardness needed while running and both at the same time. It is usually a compromise yet with XETIC we are offering the best for both aspects simultaneously.

### **Q. What is unique about the design of XETIC?**

A. PUMA's XETIC technology was engineered using state-of-the-art generative design software. With it, PUMA was able to create a totally unique looking and functionally superior product architecture.

### **Q. Why are the holes in the midsole shaped the way they are?**

A. The midsole was designed under the principles of auxetics; mechanical structures that behave in a prescribed way when placed under load. PUMA explored many shapes before landing on what they call the "recurve pattern". It tested better than the other shapes that were created and provided the best layered cushioning.

### **Q. Did PUMA partner with anyone to create XETIC?**

A. PUMA's Innovation team had a strong intuition that XETIC would work great as a midsole. After some attempts, the team quickly realized that they had to partner with experts that had the scientific tools required to engineer such a complex shape and validate its functionality. That is why they decided to reach out to MIT Design Lab, as they had the know-how and the tools required for the research to continue. This partnership was instrumental in shaping the design of the "recurve pattern" and simulating its function in the computer using special software.

**Q. What is special about the software used to create XETIC?**

A. The level of accuracy of this virtual simulation is so precise today that it allowed PUMA to create many different designs virtually without having to build the product in reality, which enabled PUMA's team to see the behavior of the material and quickly find the optimal structure for calculated cushioning

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