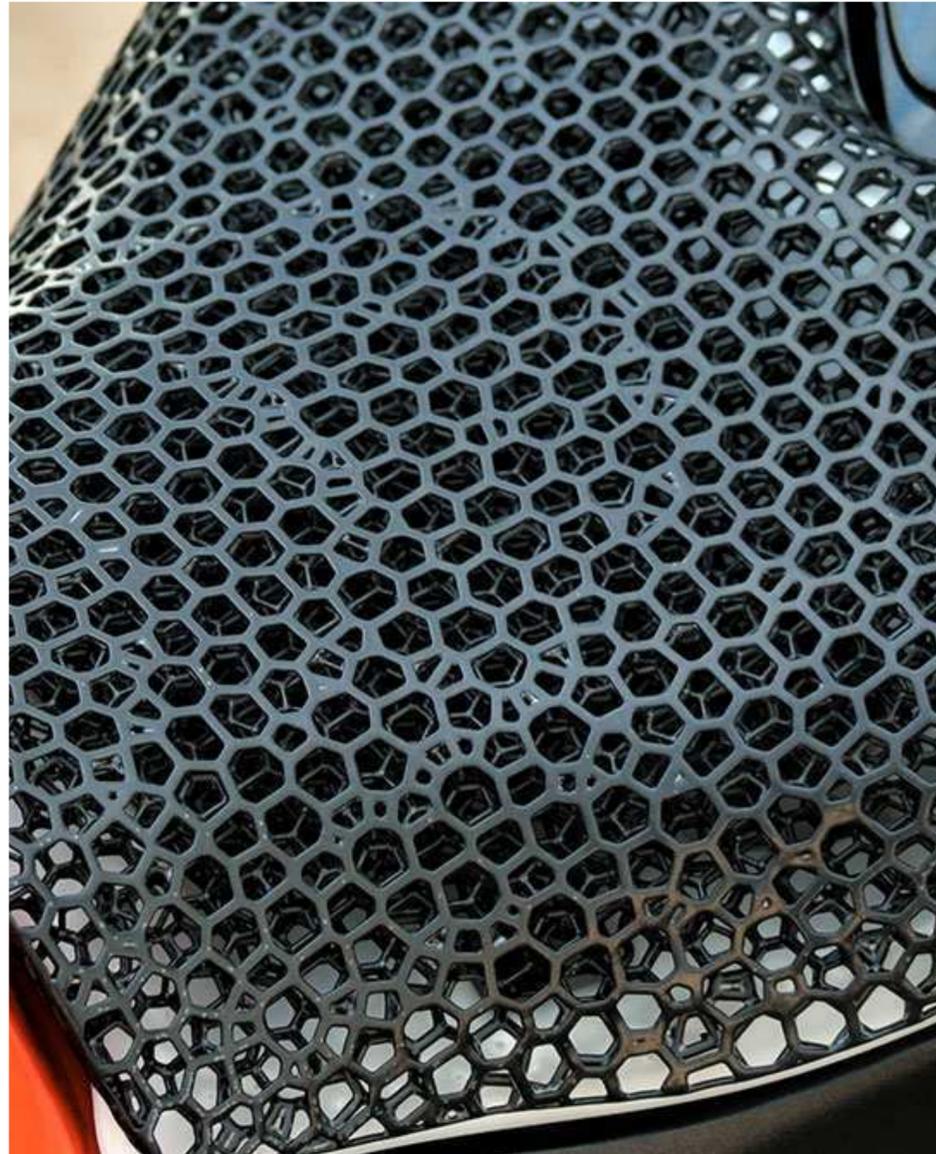


MOTORBIKE SADDLE – OECHSLER AND FORWARD AM PUT THE SMILES BACK IN THE MILES



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PROJECT BREAKDOWN

Application:

Motorbike saddle

Why OECHSLER:

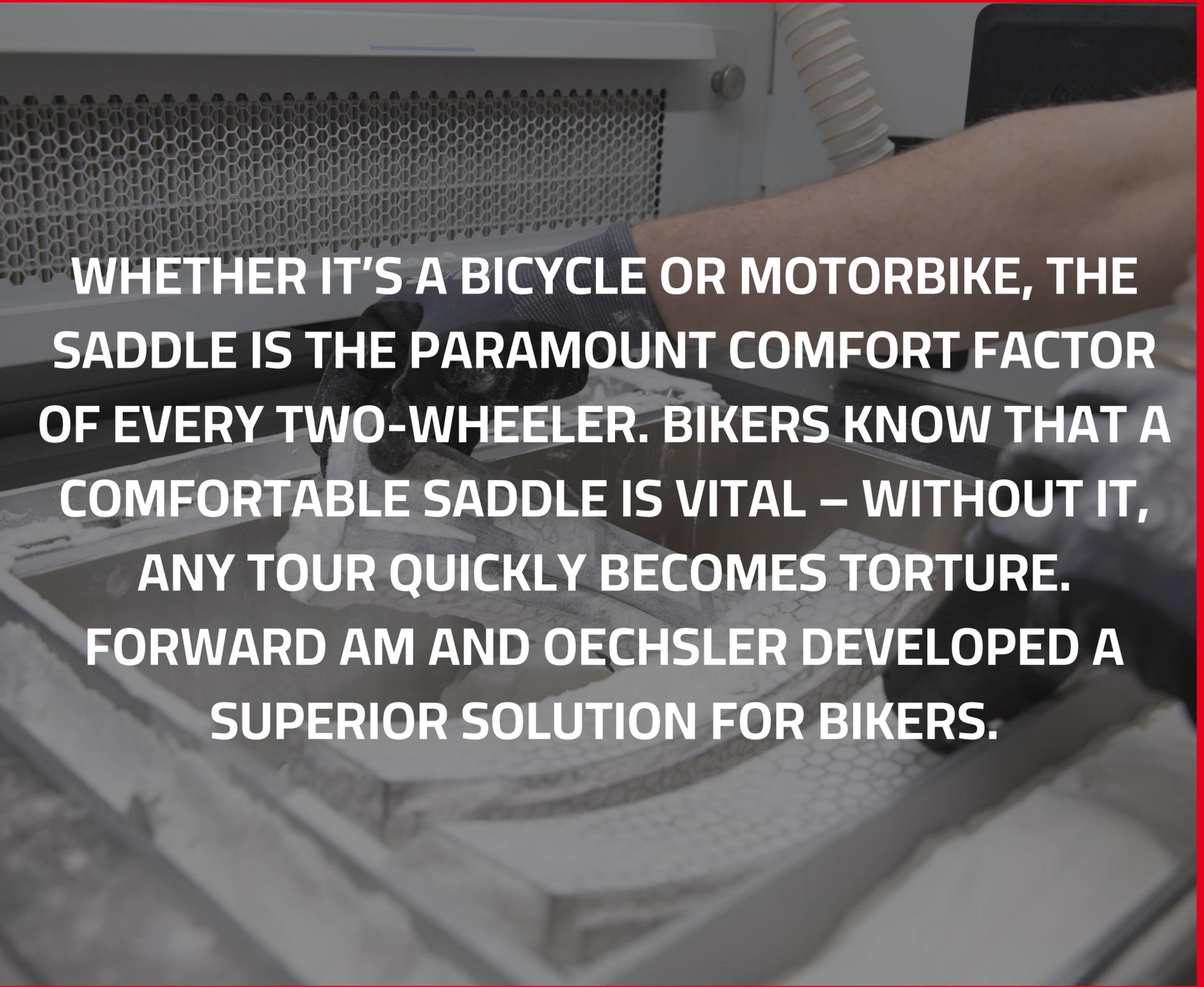
Covering the value chain from material development to global production

Material used:

Ultrasint® TPU01

The result:

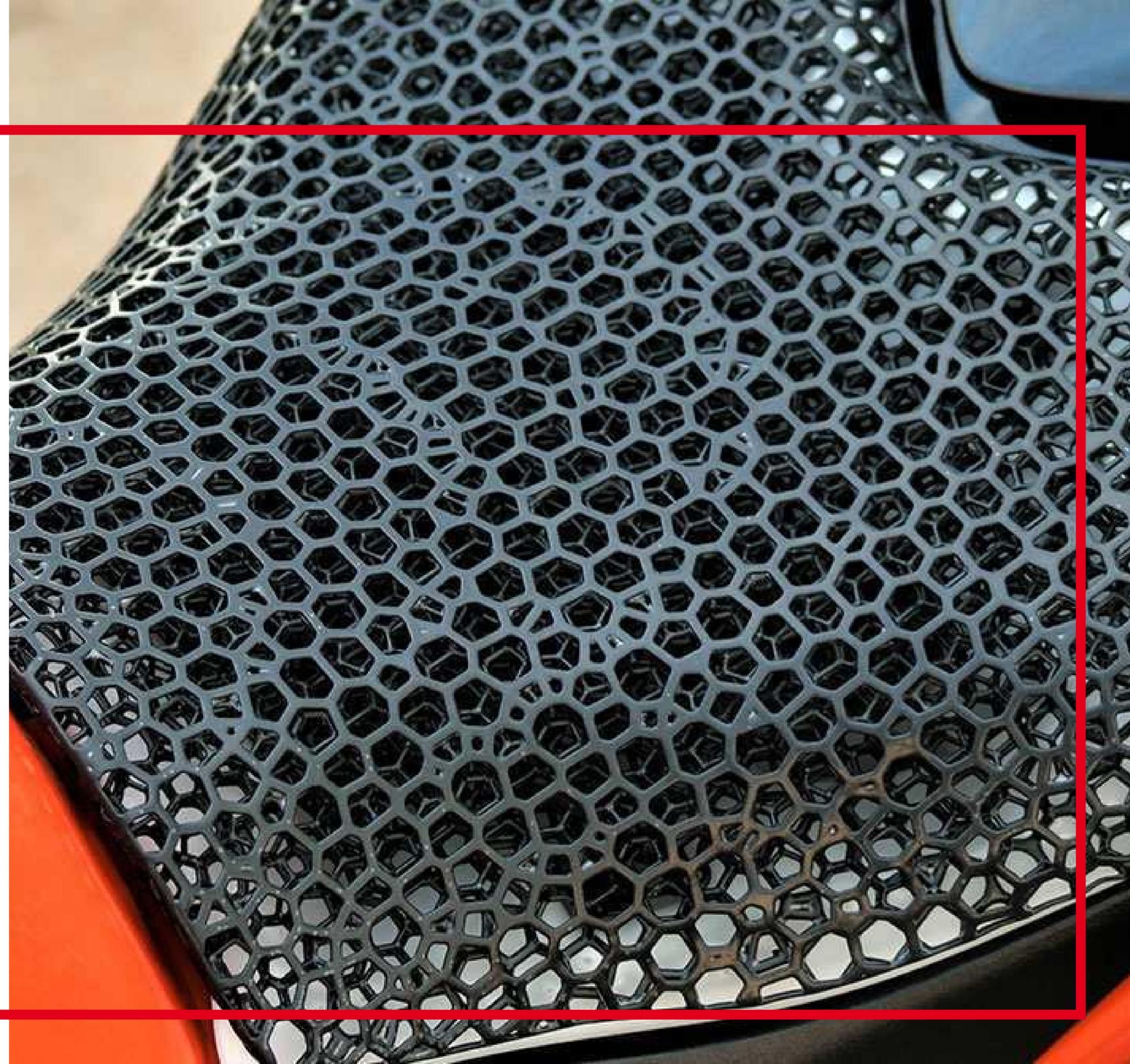
Reduced production complexity and superior seating experience



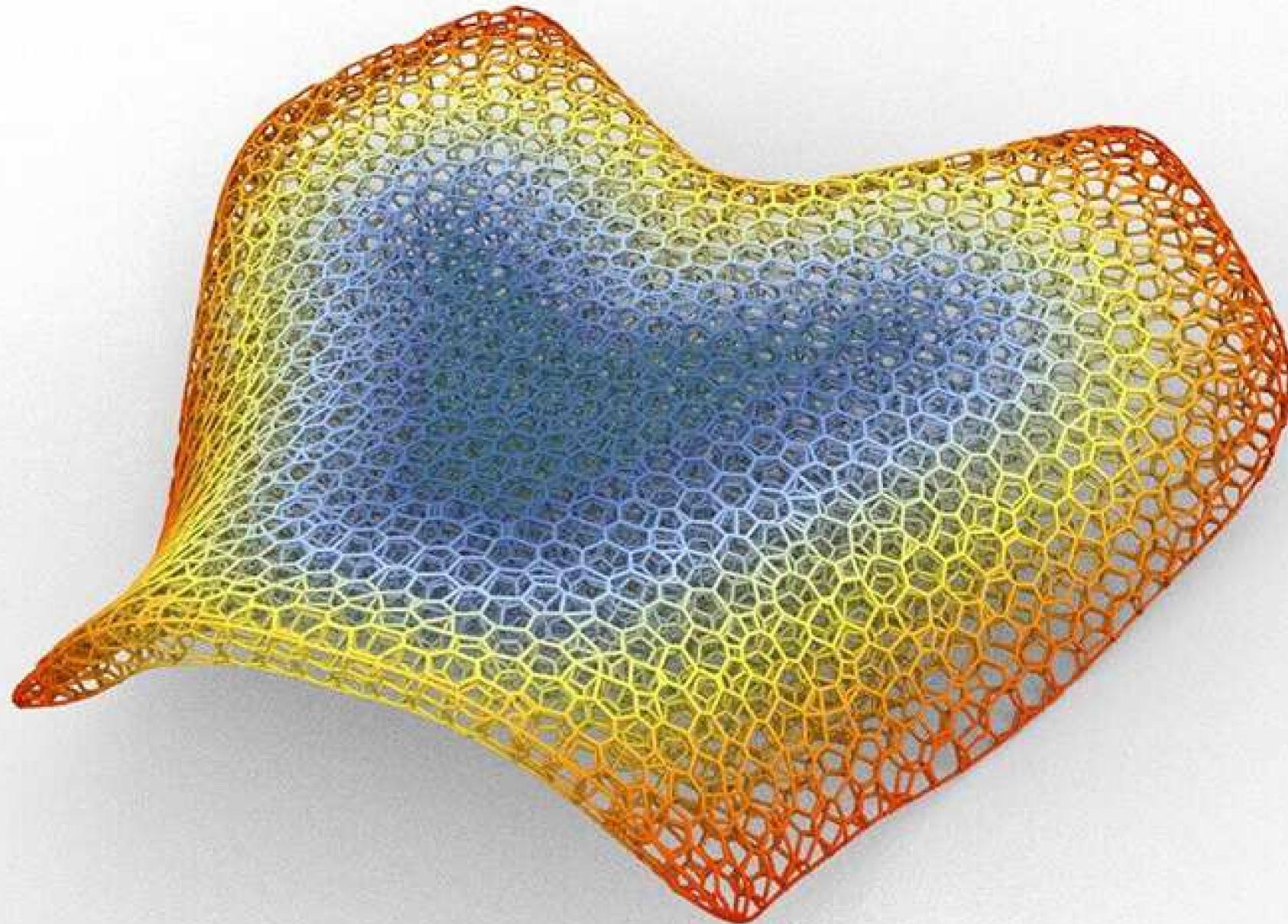
WHETHER IT'S A BICYCLE OR MOTORBIKE, THE SADDLE IS THE PARAMOUNT COMFORT FACTOR OF EVERY TWO-WHEELER. BIKERS KNOW THAT A COMFORTABLE SADDLE IS VITAL – WITHOUT IT, ANY TOUR QUICKLY BECOMES TORTURE. FORWARD AM AND OECHSLER DEVELOPED A SUPERIOR SOLUTION FOR BIKERS.

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Leading German AM material specialist Forward AM and OECHSLER teamed up to develop a new-generation motorbike saddle by harnessing the advantages of AM. While OECHSLER market and product know-how was essential for the development and programming process of the seat, advanced material from Forward AM is key to enabling the functional benefits.

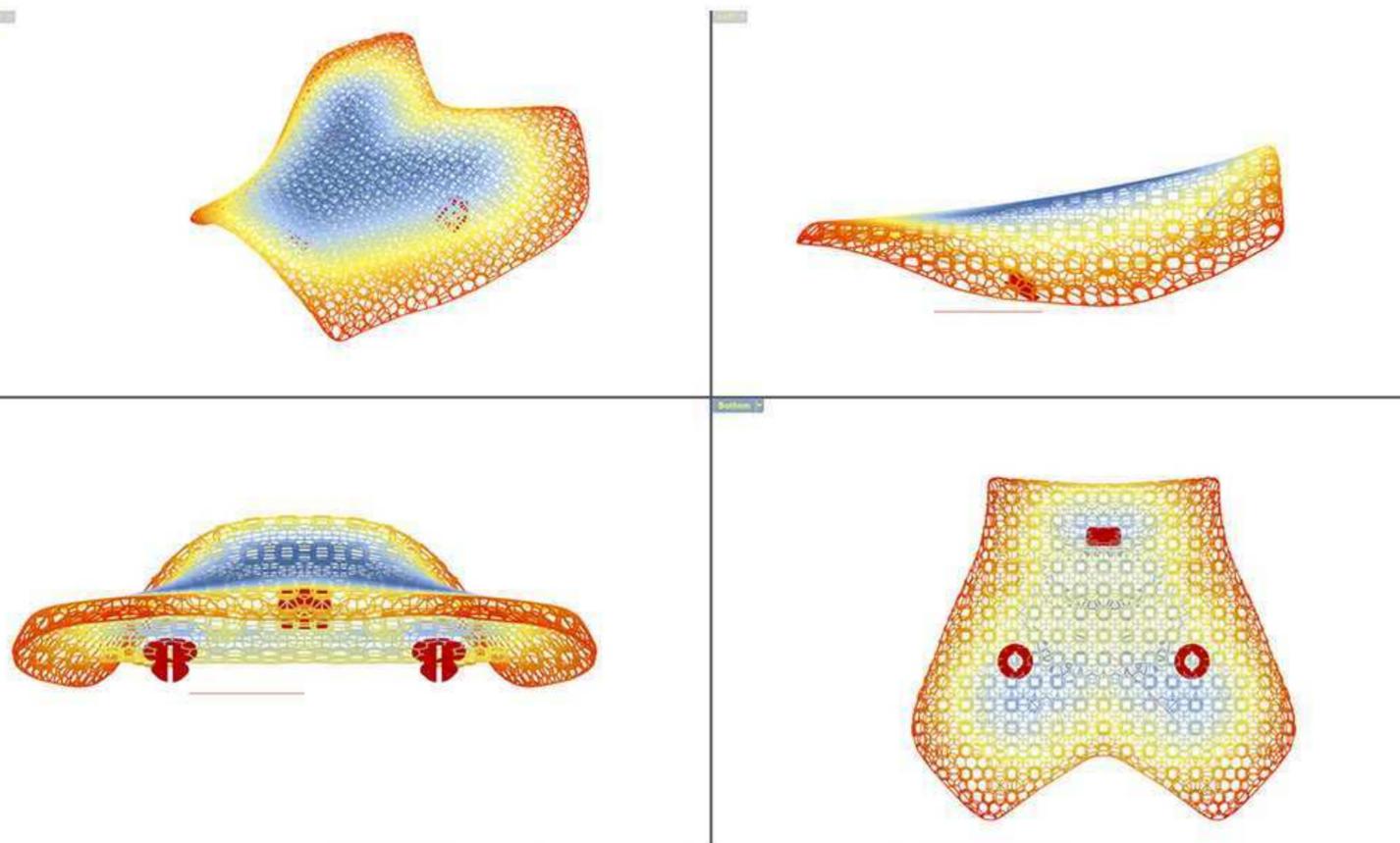


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Using industrial-scale 3D printing technology and high-performance Ultrasint® TPU01, the two companies designed a motorbike saddle that delivers the comfort riders demand. The objective was to enhance the in-saddle experience by taking the biomechanical specifications of different customer groups into account, across all segments including sports bikes, tourers, and off-roaders.

FEWER ASSEMBLY STEPS, GREATER COMFORT



Thanks to the design freedom enabled by Additive Manufacturing, the saddle can be produced in a single piece – reducing assembly time and ultimately cost. Thanks to freely designable lattice structures only possible with Additive Manufacturing, a fully integrated cushioning experience unlocks greatly enhanced comfort.

The material of choice, Ultrasint® TPU01 by Forward AM, is ideal for the production of parts requiring excellent long-term shock absorption, energy return, and flexibility. Parts printed with Ultrasint® TPU 01 deliver strong, flexible and durable performance, combined with excellent surface quality and level of detail.

Ultrasint® TPU01 opens unlimited design possibilities: it is extremely easy to print, has a very high process stability, and one of the highest throughputs for flexible materials in the 3D printing market. These unique characteristics make it a perfect fit for serial production with HP Multi Jet Fusion printers. With Ultrasint® TPU01, flexible lattice structures become easily possible.

The saddle consists of several layers of differing cushioning structures, combined in a single pad. The specific mapping of the cushioning surface was the result of extensive digital simulation and real-world testing.

SUPERIOR SEATING COMFORT THROUGH FREELY PROGRAMMABLE LATTICE STRUCTURES

Applying Additive Manufacturing makes the motorbike saddle assembly process much simpler and shorter: No gluing process is needed anymore and the top-cover material does not need to be attached with potentially dangerous metal staples.

What's more, the 3D printed saddle is up to 25 percent lighter than the traditionally manufactured model, meaning a major saving in material.

All these clear benefits translate directly into lower manufacturing costs.

The heat map shows the different degrees of hardness applied in the motorbike saddle design. The damping characteristics of the lattice structure are programmable via the geometry, the thickness (or gauge) and the size of the lattice. This allows different areas of the seat to have different damping properties, thus increasing comfort.

OUTCOME

By joining forces, OECHSLER and Forward AM achieved lightweight design, air permeability, and increased material stability while delivering greatly improved user comfort on long rides!

Here are some of the material's main benefits:

- Motorbike saddle combining several layers of differing cushioning structures in a single saddle pad
- Faster manufacturing process thanks to fewer assembly steps
- Clear material saving, equal lower production costs
- Added end-customer value thanks to increased comfort.





**ARE YOU INTERESTED IN OUR AM-PRODUCTION?
DO NOT HESITATE TO CONTACT US AT
3DPRINTING@OECHSLER.COM**