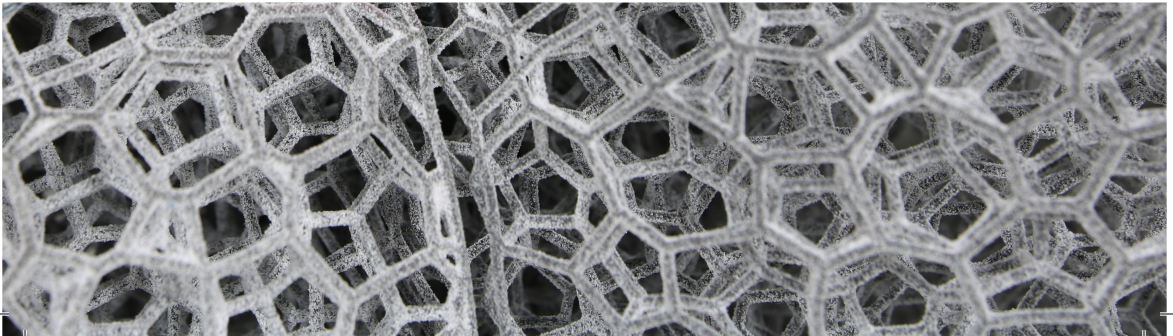




# Lattice Experience Kit

**with Ultrasint® TPU01 for HP MJF 5200 series**

Explore the possibilities of Additive Manufacturing with performance materials and advanced engineering by BASF Forward AM



Some of our trusted partners:



# Flexibility. Performance. Limitless Manufacturing Possibilities.

Decades of experience developing flexible polymers for automotive, medical, and consumer goods have gone into creating a seamless 3D printing experience. With TPU01 BASF Forward AM brings the legacy of Elastollan® to HP's reliable MJF 5200 series.

This proven machine-material combination is the key to unlocking innovative design and manufacturing potential. Explore how a **quality material, advanced lattice generation, and new post-processing solutions drive the additive manufacturing industrial revolution.**



*Oechsler Car Seat*

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# 1. Cushioning

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*The Oechsler Car Seat combines functionality with unique design for exclusive and personalized passenger comfort.*

Oechsler and BASF Forward AM pushed the concept of vehicle seating with suspension comfort. This precision was made possible by selecting specialized lattice structures for specific pressure zones. The distinctive look is achieved with Ultracur3D® Coat F available in 10+ colors.

- Ultrasint® TPU01 is tested for skin contact, durability, flame resistance, chemical and UV resistance; ready to withstand any application.
- Printed as a single component, the assembly time is greatly reduced while the lattice design allows for ventilation and weight reduction.

[Read the whitepaper](#)





*Xenith Football Helmet*

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## 2. Energy Absorption

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*The Xenith Football Helmet integrates extreme energy absorption lattice structures to maximize player safety.*

Xenith and Forward AM developed and tested intelligent impact absorbing lattice structures to reduce the risk of injuries in NFL players. The cushioning pads are customized to the athlete for a perfect fit, making player safety a top priority.

- Designed with unique energy control cells that cushion low-speed impacts, and intelligently strengthen for high-speed impacts.
- Ultrasim<sup>®</sup> simulation was used to accurately model shock absorption.

[Read the use case](#)





*Oechsler Furniture Collection*

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### 3. Foam Like Response

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*Modular and customizable, the collection by Oechsler demonstrates the possibilities of 3D printing for furniture.*

Comfort at your control, with specialized lattice structures, Oechsler is able to create unique designs while also optimizing comfort to the user. The versatility of Ultrasint® TPU01 allows for custom post-processing and recyclability, with optimization and assembly time reduction.

- Durability and recyclability combine to ensure long-lasting pieces which have a lower carbon footprint than traditional foam.

Read the use case





*HILOS Shoe*

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## 4. Energy Return

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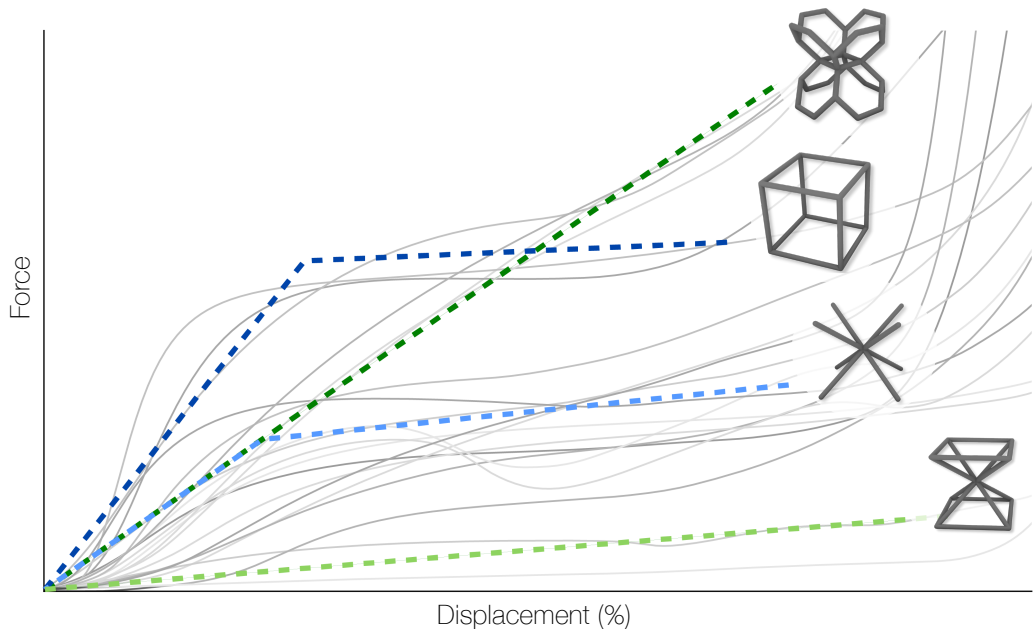
*HILOS Shoes seek to optimize the way shoes are produced while also reducing materials for a sustainable footwear future.*

HILOS uses a single component insole, midsole, outsole, and shank to reduce material waste and assembly. Choosing Ultrasint® TPU01 allows for complete recyclability and reduced carbon footprint in addition to a faster product development cycle.

- 92% fewer components per shoe and only 12 production steps (traditionally 360 steps).
- Extensively tested for hydrolysis resistance, and wearability as well as a one-year walking endurance test.

Read about HILOS sustainability





**Discover our whitepaper:** Transforming Product Development with Lattices to learn how to unleash the power of lattice design.

# Lattice generation for precision performance

Expert engineering powers any application with lattice generation designed to **unlock desired mechanical properties**. Ultrasint® TPU01 is specially formulated to manufacture complex lattice structures which can be tailored to any engineering challenge.

1.

Cushioning



2.

Energy Absorption



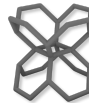
3.

Foam Like Response



4.

Energy Return





# Leaders in industrial 3D printing solutions

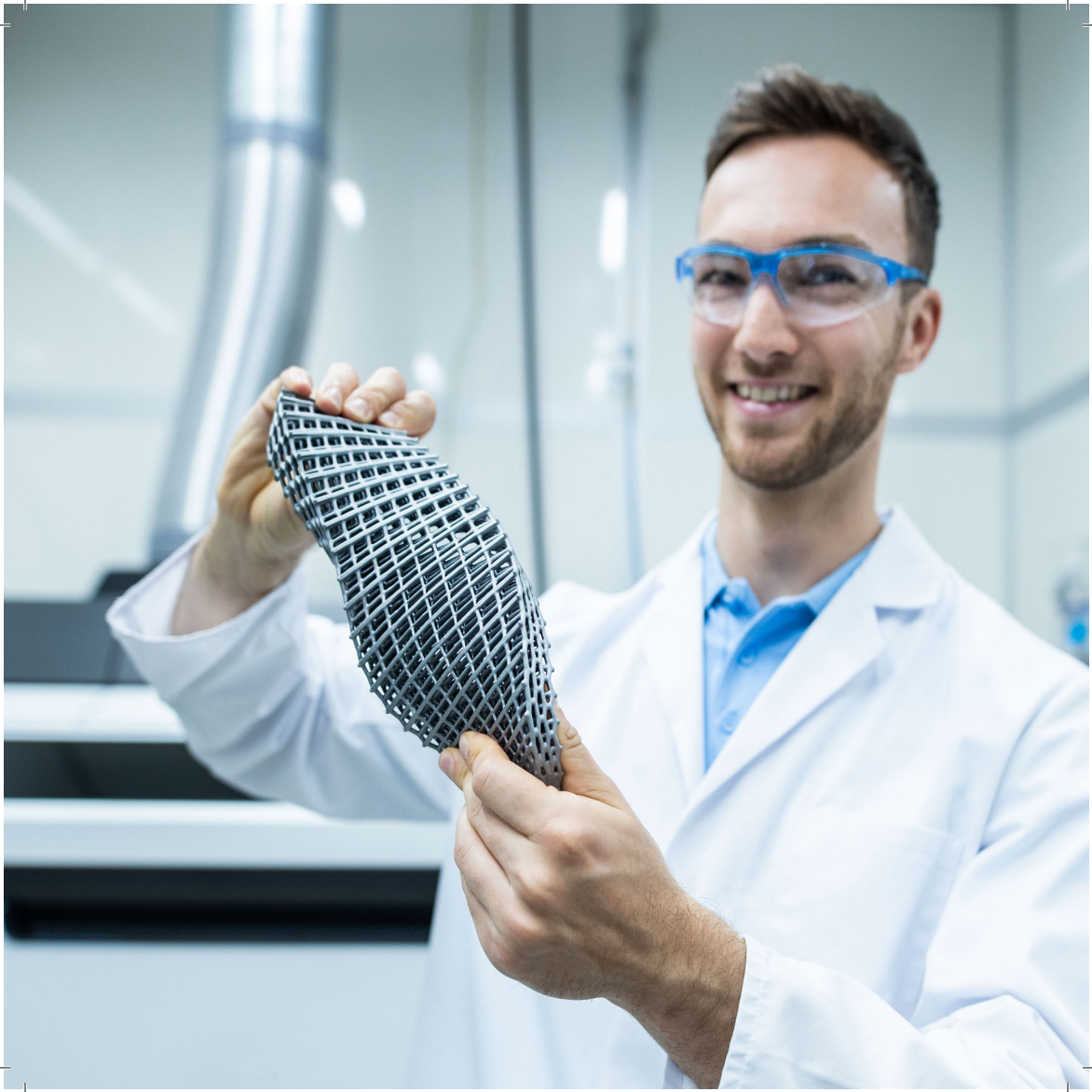
**DESIGN** *Ultrasim® Virtual Engineering & Simulation*

**PRODUCTION** *Certified Production Partners*

**POST-PROCESSING** *Advanced surface finishing*

BASF Forward AM's expert design optimization, lattice generation, virtual engineering and simulation services ensure your parts perform exactly as expected before any part is ever printed.

But we don't stop there. We've developed industry leading post-processing solutions to ensure your parts look as good as they perform. Available in 10+ colors, Ultracur3D® Coat F provides a flexible coating to enhance appearance and improve part performance.





# The legacy of Elastollan® - the future of 3D Printing

Developed together with HP, BASF's proven record of performance and quality is now available with one of the most reliable 3D printing technologies, HP's MJF 5200 series.



**UV stability**



**Hydrolysis  
Resistance**



**Bio-compatibility  
test passed**

Charpy Impact Strength Notched -10°C	46 kJ/m <sup>2</sup>
E-Modulus	85 MPa
Tensile Strength	9 MPa
Elongation at Break	280 %



**Complete TDS**



Curious to see how lattice  
structures and Ultrasint®  
TPU01 can revolutionize  
your products?

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Explore the possibilities with our experts to uncover  
the potential Additive Manufacturing advantages  
for your applications.

Contact us today: [sales@basf-3dps.com](mailto:sales@basf-3dps.com)



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