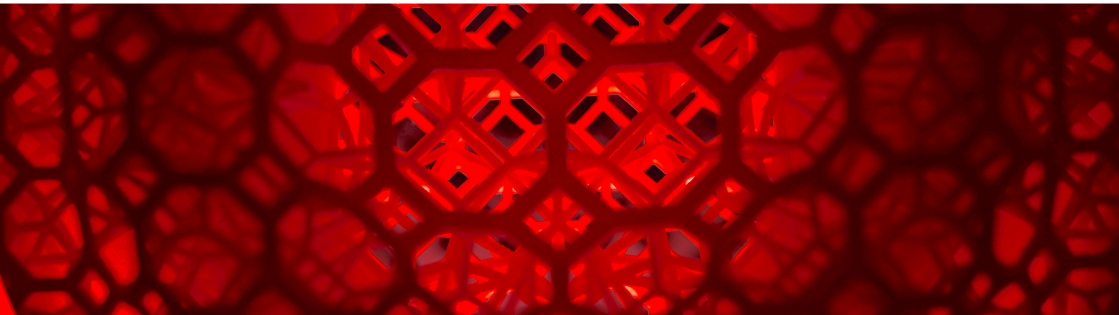
FORWARD AM
Innovating Additive Manufacturing

BASF
We create chemistry

Lattice Application Discovery Kit

Custom lattice solutions with Ultrasint® TPU01 for HP MJF 5200 series

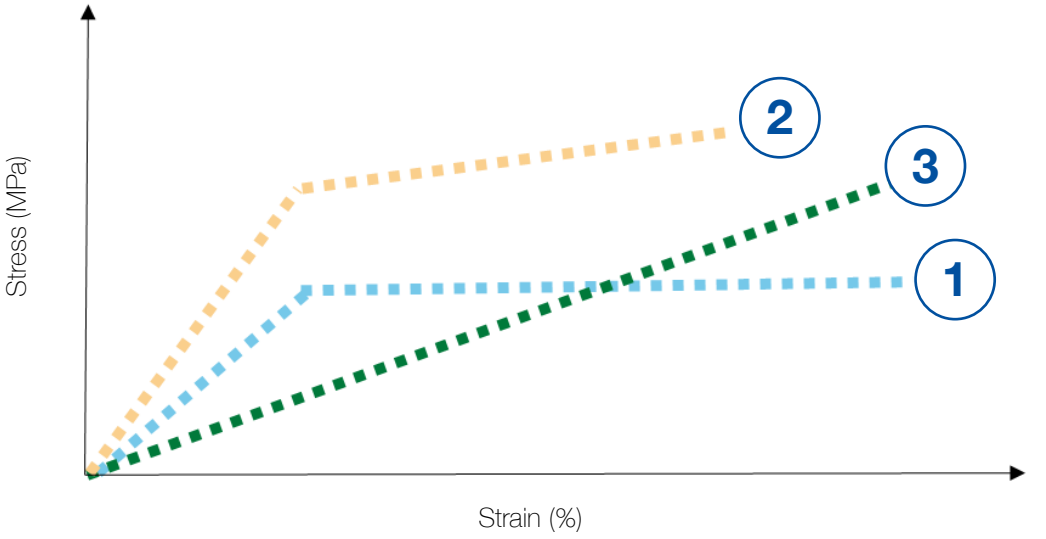


Some of our trusted partners:

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. We've developed a complete solution for lattice applications built on our deep material and engineering knowledge.

Advanced lattice engineering 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.**



1.

Seating

2.

Protection

3.

Footwear

Finding the right lattice for precision performance.

Custom lattices and 3D printing offer many benefits to a wide range of industries and applications. There are millions of lattices and designing a suitable lattice is time consuming and requires material and engineering knowledge. Forward AM's material, technology, engineering, and post-processing expertise enables anyone to benefit from the weight optimization, customization, and improved airflow of latticed parts.

Our complete solution takes the trial and error out of **3D printing lattices for seating, protection, and footwear applications.** Rely on our expertise to save you time and money developing your innovative project.

Discover our complete lattice solution...

Oechsler Car Seat

1. Seating

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 innovative and precise design 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.

- **Increased comfort by adjusting lattice hardness in different pressure zones**
- **Seat design tailored for the individual user**
- **Lighter weight and passive ventilation**

Read the use case

Xenith Football Helmet

2. Protection

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.

- **Absorb and distribute impact forces**
- **Energy control cells cushion for low-speed and strengthen for high-speed impacts**
- **Greater comfort and breathability by reducing weight and increasing airflow**

Read the use case

HILOS Shoe

3. Footwear

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.

- **Targeted support for different parts of the foot reduces pressure points to increase comfort**
- **Tailored comfort for the individual wearer**
- **Increased airflow and passive aeration**

Read the use case


Ultrasim® 3D Lattice Engine
File Project Edit View Help
BASF
We create chemistry
FORWARD
BASF Lattices
Select Material
Ultrasint® TPU01
Select Ultrasim® 3D Lattice Test Pad
Protection
Select Code on Test Pad
B
Code Number
1
2
3
4
Generate
Export

Software: Ultrasim® 3D Lattice Engine

The Ultrasim® 3D Lattice Engine is a software powered by Hyperganic that puts the power of advanced lattice engineering at your fingertips.

With pre-validated lattices designed specifically for Seating, Protection, and Footwear applications, generating customized lattices takes only a few clicks. Simply upload your 3D file, select the application and desired lattice, and automatically generate your print-ready lattice file.

Learn more about the
Ultrasim® 3D Lattice Engine

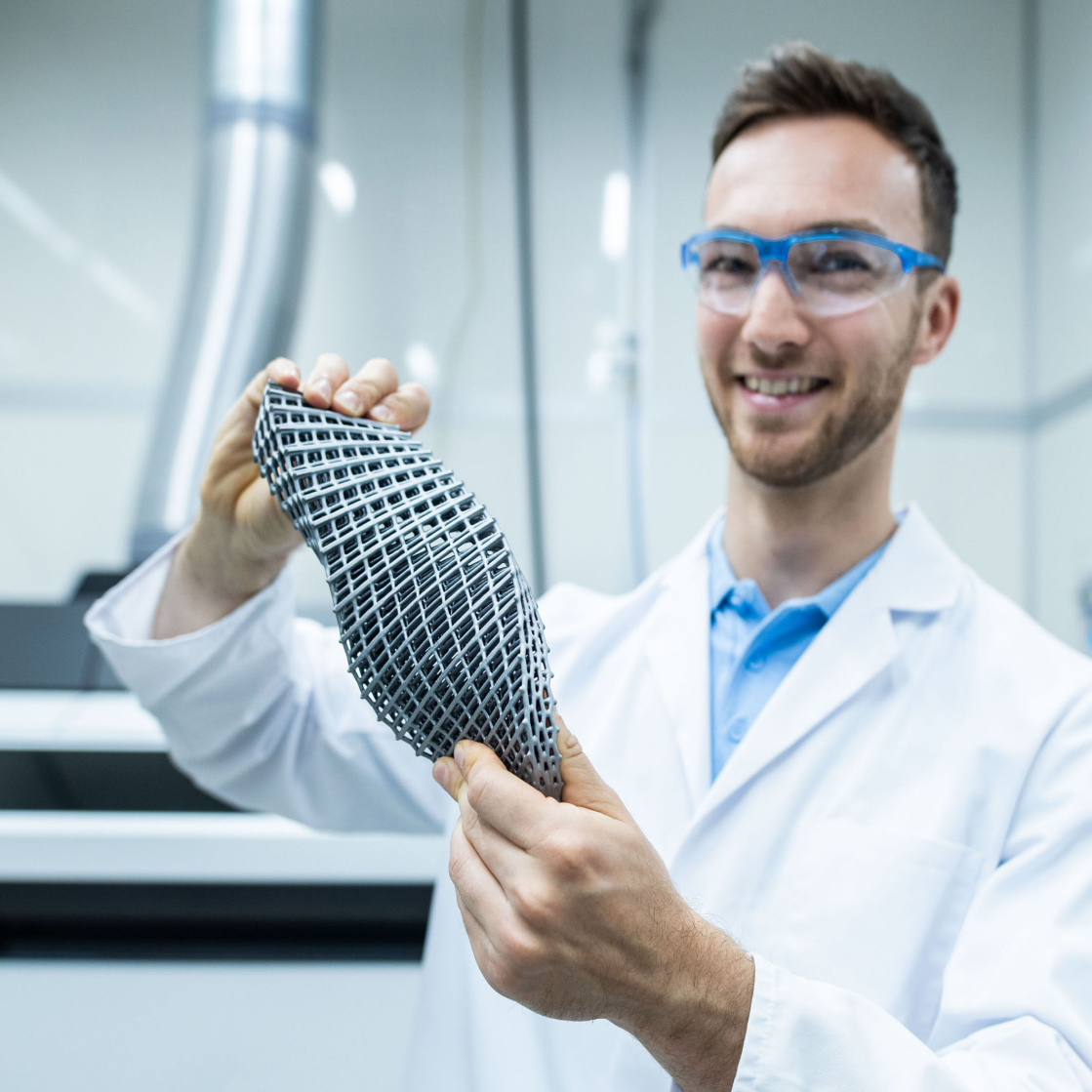
Posedla Joy Seat

Let our experts design custom lattices to your exact specifications.

Experienced lattice design engineers develop custom lattices for your application. Benefit from years of material knowledge and specialized training in advanced lattice engineering to optimize performance, production, and costs.

Forward AM's engineers also offer FEA analysis and simulation to reduce trial and error and deliver the performance you expect.

Learn more about our lattice design service offers



Durable flexibility for high-performance applications.

Take the guess work out of reliable 3D printing for flexible applications with Ultrasint® TPU01 and HP's MJF 5200 3D printers. Impressive properties such as **low-temperature performance, high abrasion resistance, and great chemical resistance** unlock new applications with 3D printing.

UV stability

Hydrolysis Resistance

Bio-compatibility statement available

- ☑ Recyclable
- ☑ Life Cycle Assessment
- ☑ Carbon Compensation

Complete TDS

Mechanical performance meets exceptional beauty.

Ultracur3D® Coat F+ enables quality end-use lattice parts for advanced applications. The unique formulation offers flexible coverage without affecting the mechanical performance of your finished lattice parts.

UV stability

Hydrolysis Resistance

Bio-compatibility statement available

- **Excellent adhesion**
- **Outstanding flexibility**
- **Customized color development available**
- **Low VOC content**

Complete TDS

Detroit - Heidelberg - Shanghai

Material, technology, engineering, and post-processing expertise in one place.

Explore the possibilities of lattices for your application with our experts and complete solution.

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forward-am.com