

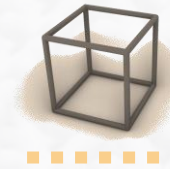
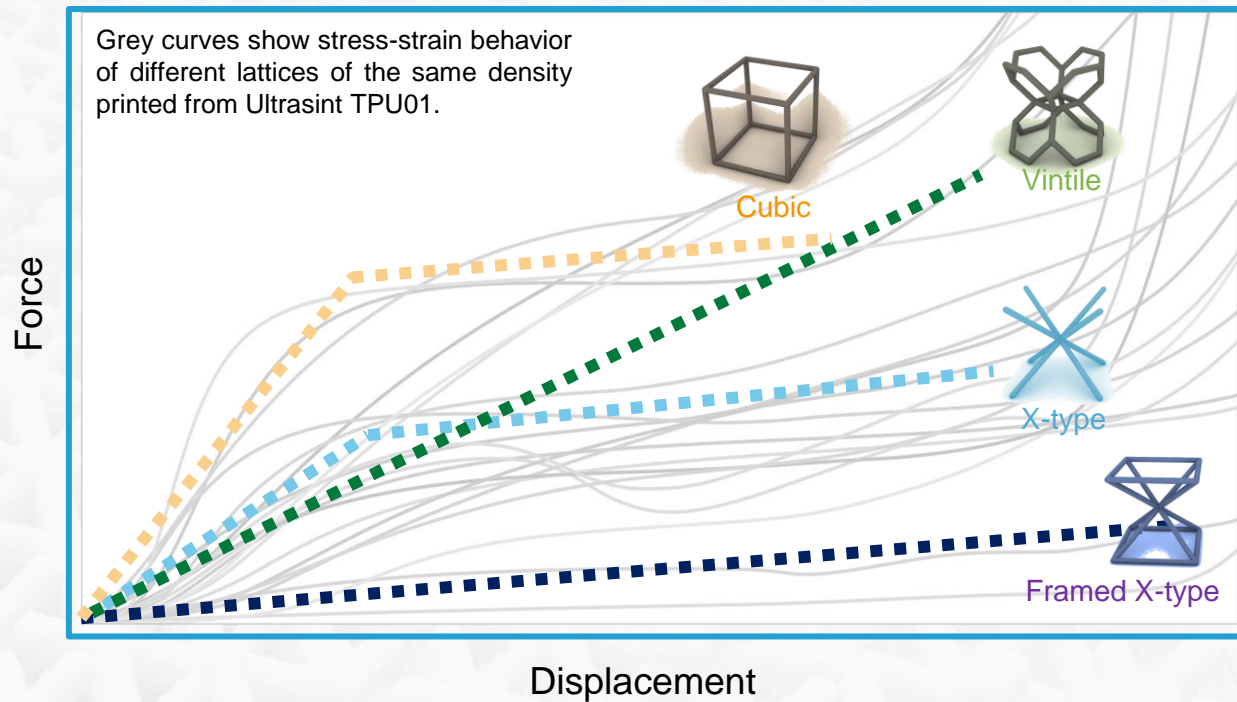
Ultrasim® 3D Lattice Design

Offering



How to find the right lattice for your application?

- One material many behaviors



High energy absorber



Low energy absorber



High linear stiffness



Low linear stiffness



We support you in every stage – from starter to expert

To obtain the optimum performance the right lattice is key. We offer 4 easy methods to find the right lattice and generate the lattice design:

Lattice Catalogue

Starter 1:

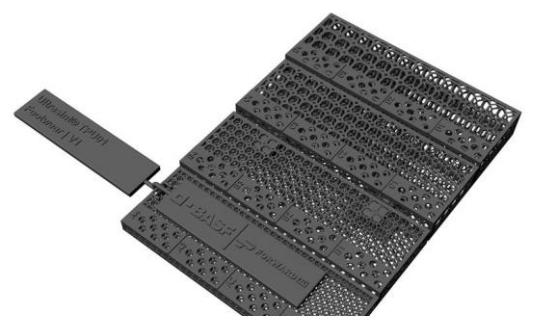
Get a quick start by choosing from our lattice application catalogue and let us design the right lattice.



Lattice Test Pad

Starter 2:

Get one of our physical lattice test pads to experience the wide range of properties lattices can achieve.



Coming soon

Foam Replacement

Premium:

Use our in-house developed FEA and lattice library to mimic a foam you use today by a lattice.



Full Engineering

Enterprise:

We support you in each step of the product design development for your ideal lattice design.



Ultrasim® 3D Lattice Design - Offering

	Lattice Catalogue <u>Starter 1</u> Get a quick start by choosing from our lattice application catalogue and let us design the right lattice.	Lattice Test Pad <u>Starter 2</u> Get one of our physical lattice test pads to experience the wide range of properties lattices can achieve.	Foam Replacement <u>Premium</u> Use our in-house developed FEA and lattice library to mimic a foam you use today by a lattice.	Full Engineering <u>Enterprise</u> We support you in each step of the product design development for your ideal lattice design.
What you get:				
• Digital lattice part as STL	✓	✓	✓	✓
• 3D printed lattice pad (footwear, protection, seating)	✓	✓	✓	✓
• Digital stress strain curves of all lattices	✓	✓	✓	✓
• Digital stress-strain curves of tested foam			✓	✓
• Full engineering support				✓
What we need from you:	• STL or any closed mesh*	• STL or any closed mesh* • Code from our lattice test pad	• STL or any closed mesh* • Code from our lattice test pad • 100x100x50mm foam sample	• 1 hour of your time to understand your problem and derive a solution concept.
Add-on (+ 250 €/each):	• Partial skin • Diameter gradients for multi-zone lattices	• Additional Lattice Test Pad (same type)	• Partial skin • Diameter gradients for multi-zone lattices	• Partial skin • Diameter gradients for multi-zone lattices
Price:	Starting at 500 €	Starting at 700 €	Starting at 2.500 €	On request
Lead time:	14 days	Coming soon	On request	On request

*Disclaimer: Limited to part size of less than 300x250x250mm; larger parts needs to be segmented which requires a segmentation concept (premium solution)

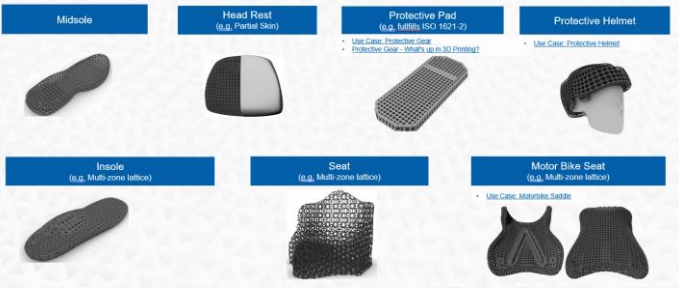
How it Works



Starter 1 - Workflow: Choose from our Lattice Catalogue

1. Find your application in our Lattice Catalogue

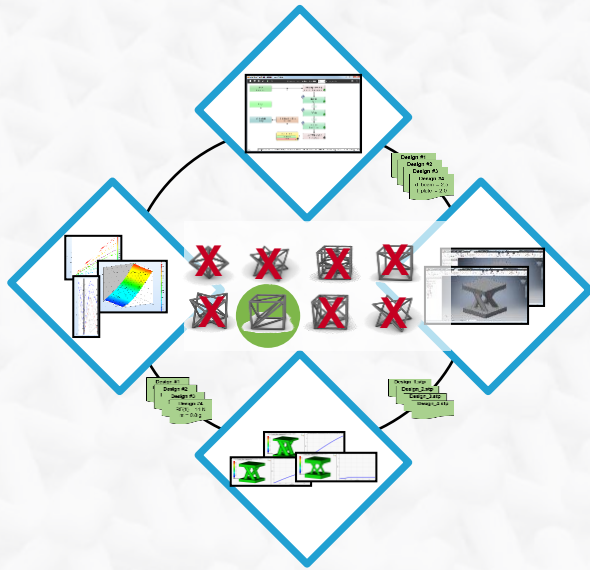
You choose one application resembling your product and provide us your STEP/STL file.



STL or any closed mesh (.stl, .obj)

2. We generate the lattice design

We generate a mesh (.stl) to fill the lattice into your part.



3. You receive the digital lattice design

An .stl with the lattice design of your part is sent to you for validation and printing.



Starter 1 - Workflow: Lattice Catalogue



Insole





Midsole





Protective Pad





Protective Helmet





Head Rest





Motor Bike Seat





Seat



Starter 2 - Workflow: Lattice Test Pad

1. Choose Application specific lattice pad

Choose an application specific lattice pad and provide us your STEP/STL file.

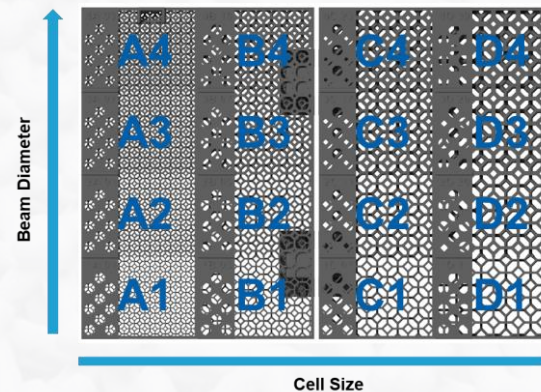
-  Cushioning
-  Protection
-  Seating
-  Footwear



STL or any closed mesh
(.stl, .obj)

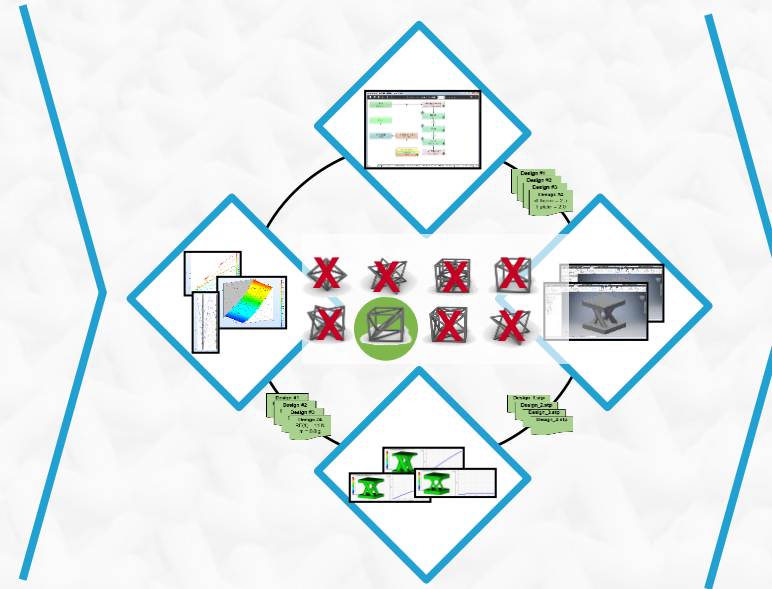
2. Receive the lattice pad & choose your lattice code

You will receive a printed lattice pad and can choose your lattice code (A1, A2, etc.)



3. We generate the lattice design

Using your part, we generate a mesh (.stl) with a lattice filling it based on the lattice code.



4. You receive the digital lattice design


An .stl with the lattice design of your part is send to you for validation and printing.



Starter 2 - Workflow: Lattice Test Pad

- Find the right lattice using touch & feel lattice pads
- Each lattice pad has 4 diameters + 4 cell sizes giving you 16 options to choose from
- 3 lattice pads for different applications available:

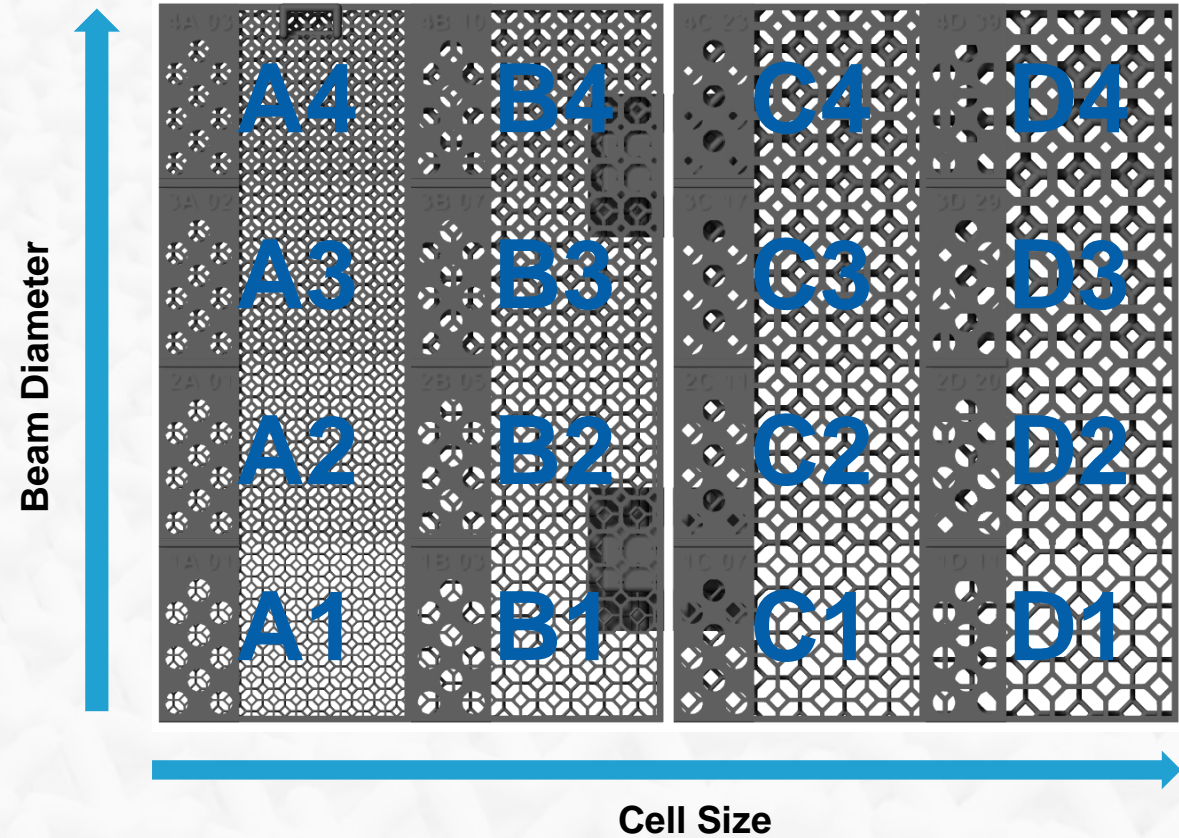
 Protection

 Seating

 Footwear



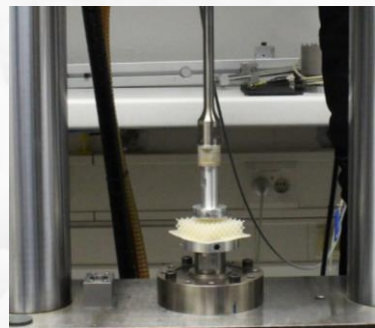
Footwear Lattice Test Pad:



Premium Workflow: From Foam to Lattice

1. Physical testing of foam sample

Send us a piece of foam (100x100x50mm). We test the foam sample to characterize it's properties.



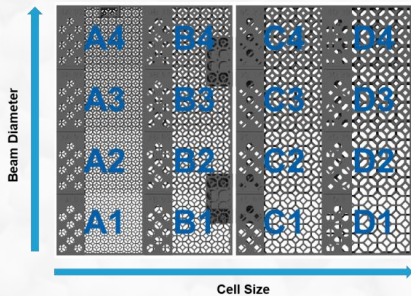
2. Finding the right lattice using FEA

We match the stress-strain behavior of your foam and its behavior with our lattices.



3. Receive your specific physical lattice pad

Creation of a lattice pad around the optimum lattice parameters is send to you for a final decision on lattice.



4. You receive the digital lattice design

We generate your customized lattice into your part or a generic sample.



5. Final Part design

You receive a stl-file with the lattice design of your part.



Enterprise - Workflow: Full Engineering

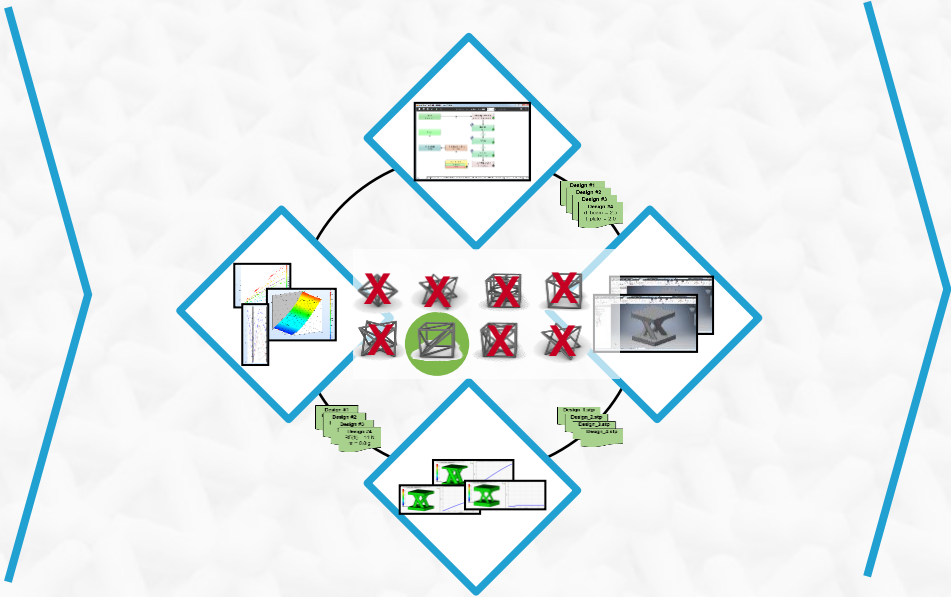
1. Kick-Off Meeting

1 hour of your time to understand your problem and derive a solution concept. This may include a lattice development, a full product development or out-of-the-box service.



2. We develop the customized solution together

Depending on the customized solution concept, we work together to develop your lattice design.



3. You receive the digital lattice design

An .stl with the lattice design of your part is sent to you.



Any Questions? Contact Us!

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We create chemistry



FORWARD **AM**

Innovating Additive Manufacturing