

LATTICE MEDICAL

Find out how Lattice Medical uses the Alveo3D solution to meet stringent ISO7 cleanroom standards in our case study.

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www.alveo3d.com



Chambéry, France

EXPERT 3D PRINTING SECURITY





LATTICE MEDICAL

Soft Tissue Reconstruction

SPECIALIZED IN TISSUE ENGINEERING FOR 3D PRINTING



LATTICE MEDICAL'S MISSION

LATTICE MEDICAL SOLUTION

Lattice Medical was founded in 2017, a company specializing in tissue engineering, biomaterials and 3D printing.

Lattice Medical has developed two devices: MATTISSE is a 3D-printed absorbable breast prosthesis, and RODIN is a matrix enabling hypodermis regeneration.

COMPANY PROFILE

Business sector

- Manufacture of medical equipment.

Company size

- Around 20 people.

Head office

- 80 rue du Docteur Yersin, Loos, France

USE CASES

- Caisson sur mesure
- AlveoPro

Client depuis 2019

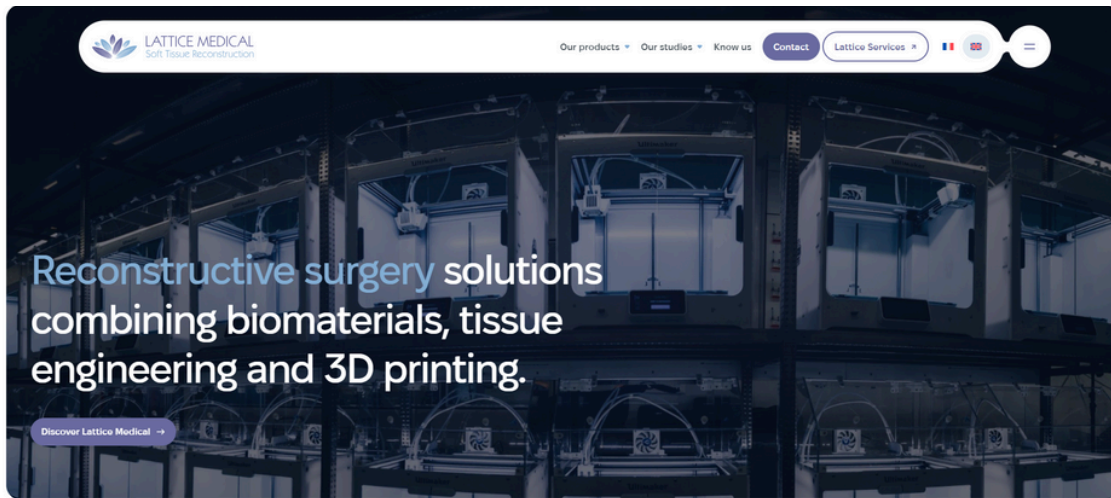


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II. THE CHALLENGES



HIGH EMISSIONS OF PARTICULATES

Filament extrusion emitted too many particles, making it **impossible to comply with ISO7 cleanroom standards.**

CONTRAINTES D'ESPACE

The option of using another space with a less stringent ISO standard was not viable, as there was no suitable available space offered by Cousin Surgery.

IMPACT OF EMISSIONS ON OPERATIONS

The level of particulate pollution from extrusion was too high to allow the machines to be used in the ISO7 cleanroom without adaptation.

III. SOLUTION

1. WHY DID YOU CHOOSE ALVEO3D'S HOUSINGS AND FILTERS?

When we started setting up our pilot plant between 2019 and 2020, there weren't many solutions for shutting down the printers. What's more, the systems were designed for very specific machine models.

What's more, we wanted to enclose an extruder (not a 3D printer), so we had to find someone capable of making custom enclosures.

Then we came across your stand at the 3D Print show in Lyon 2019, and said to ourselves "**bingo**", we've found a solution that meets our specific needs.



Plastic extruder enclosure





Cleanroom ISO7 Lattice Medical

2. WHAT MODELS OF ALVEO3D HOUSINGS OR FILTERS HAVE YOU USED?

In the early days, I believe there was only one type of filter. So, we had adapted this filter to our custom-built cabinet.

Over time, however, we realized that the 1^{er} filter model was not sufficient. And so in 2022, we got back in touch to find out how we could optimize the solution we had.

So we got back in touch and had several technical exchanges to define our needs more precisely. As a result, we switched to the AlveoPRO system, which we were one of the first to test and purchase.

3. WHAT WAS THE INSTALLATION PROCESS LIKE?

Installation and integration were very quick. The unit was delivered pre-assembled, and the filtration system can be fitted very quickly. Finally, operation is very simple, with no room for error, with the choice of ventilation intensity and time.

By the way, Alveo3D has always been very responsive to our requests and very accommodating. I'm thinking in particular of the pre-tests of the AlveoPRO system. In fact, we were able to use the prototypes as a preview to find out whether the system could meet our needs.



AlveoPro: Smoke extractor



KEVIN ROUX

Process R&D Engineer, Lattice Medical

"The Alveo3D system provided a solution to a production particulate contamination problem. This solution enables us to comply with the cleanroom particle threshold (ISO7), while extruding a polymer filament."

