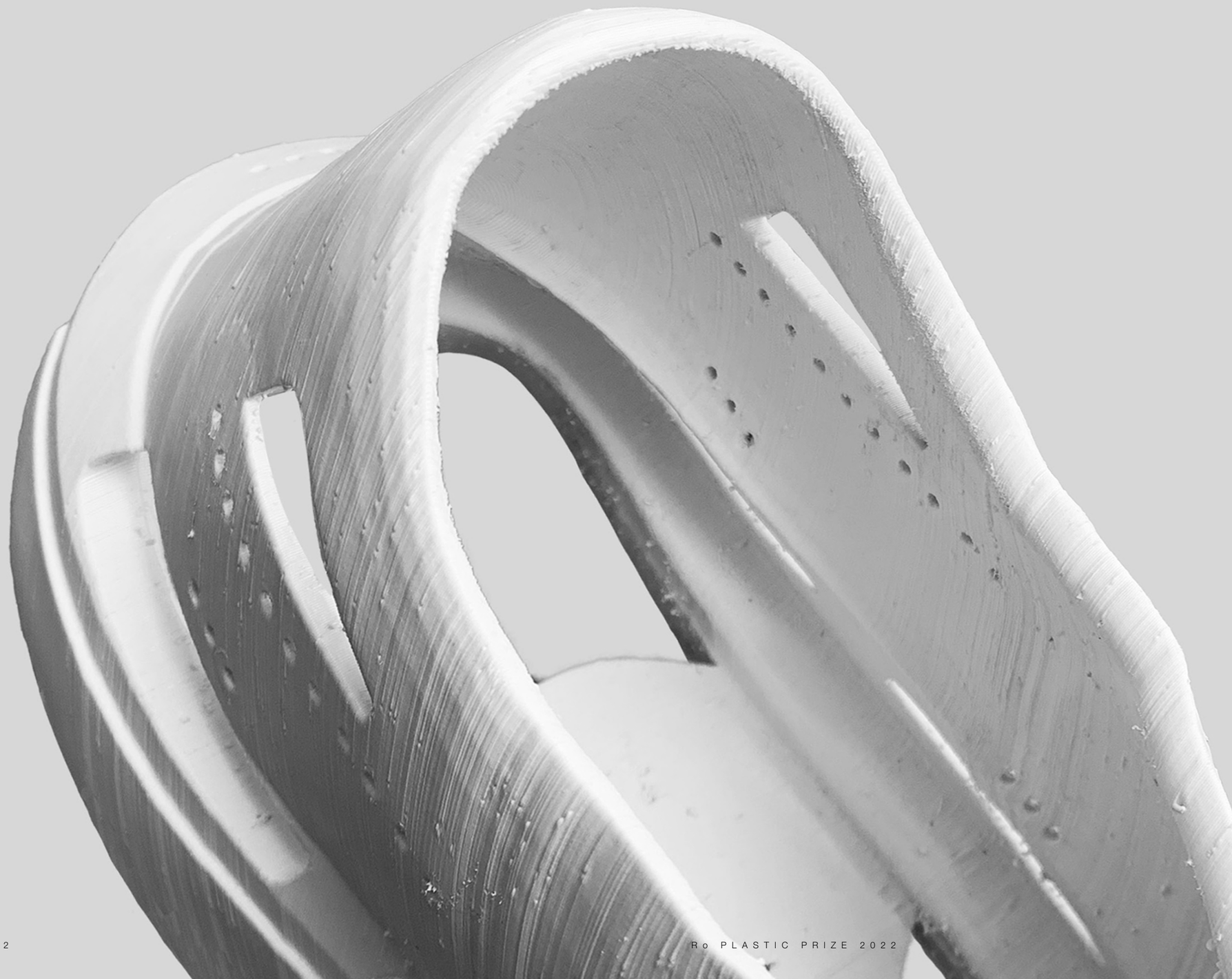
S O L U S

Soluzione sostenibile

S O L U S / Soluzione sostenibile

Ro PLASTIC PRIZE 2022

One of the objectives of this project is to guarantee the consumer a prolonged use over time, beneficial for the health of the wearer but also for the environment.
This shoe is for all those people who like to practice different sports but using the same training shoe, since the activity is carried out at an amateur level and therefore without the need to own specific and professional shoes: this stresses the wear of the structural parts, creating potential damage to both physical and environmental health. Solus offers the right support during the different activities, spending only on what needs to be changed. The goal is to favor the right choice, safeguarding one’s health and that of the environment.



Solus - soluzione sostenibile **/ 2021 / Particular of the external shell.**

Ro PLASTIC PRIZE 2022

Alessandro Battaini

Department of applied arts / Product Design
NABA, Nuova Accademia di Belle Arti / Milan

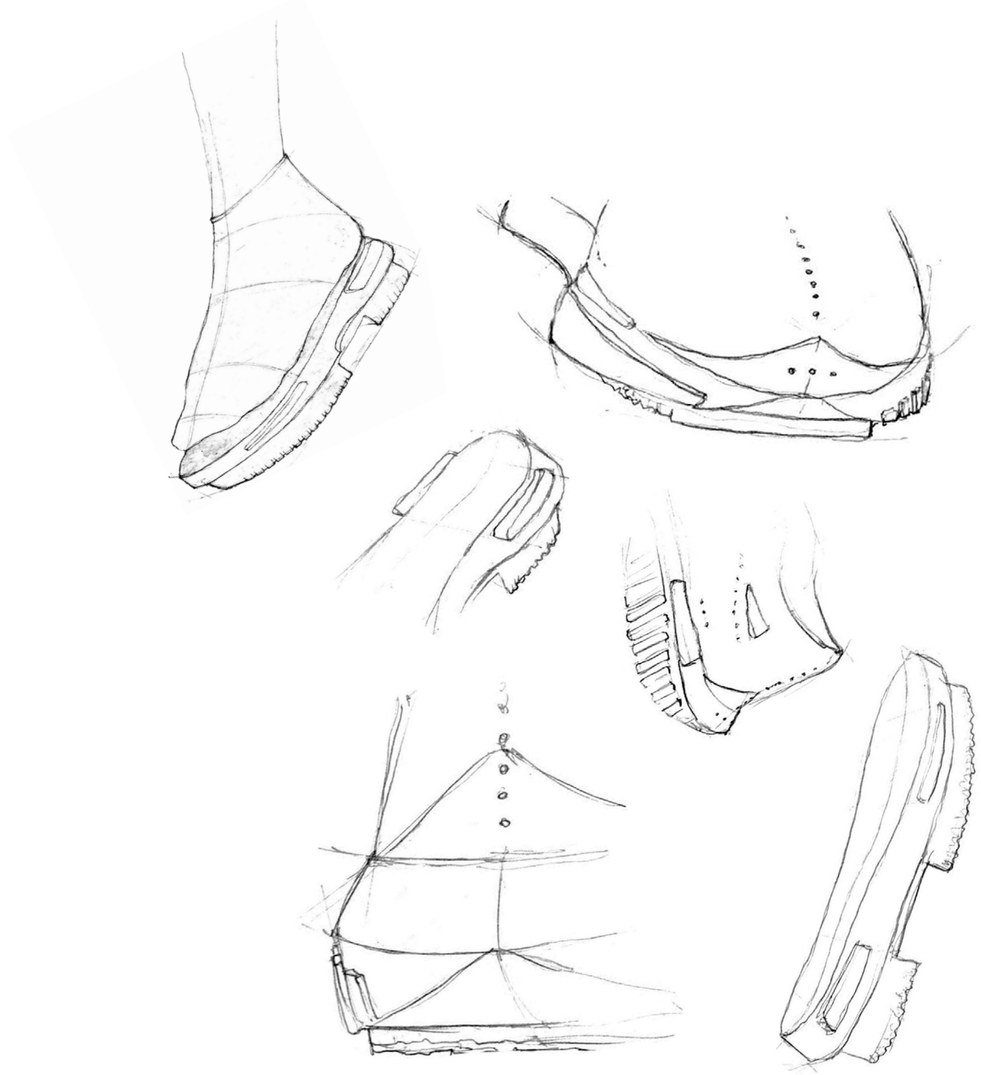
Ro Plastic Prize 2022 - RoGUILTLESSPLASTIC

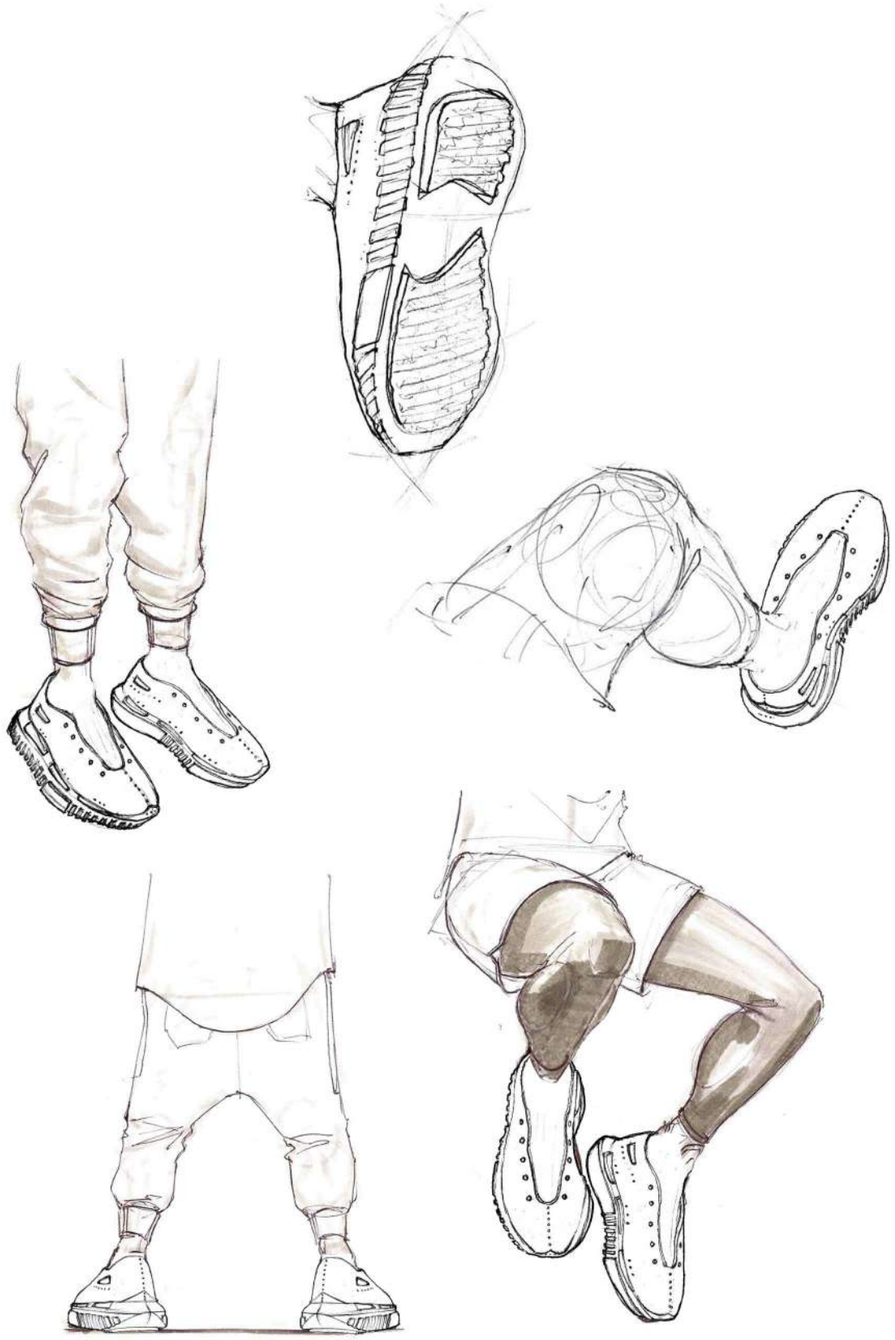
Via Mazzini 180, 24021 - Albino, Bergamo (IT)
+39 3382030663
alessandro_battaini@studenti.naba.it
alebatta22@virgilio.it

behance.net/alessandrobattaini

S O L U S
Soluzione sostenibile

Solus - soluzione sostenibile /
2021 /
Design sketches.





Sports shoes (sneakers) have enjoyed worldwide success especially since the beginning of the 21st century. However, their production has a considerable impact: just think that a classic pair of sneakers produces about 136 kg of carbon dioxide emissions, while other types of shoes, on average, release about 30 kg of carbon dioxide into the environment.
The traditional athletic shoe is made up of 26 materials and between 8 and 12 components, while its assembly, which can contain up to 65 distinct parts, can count about 360 steps.
In a seasonal fast fashion world where mass waste is generated very quickly, it is good to consider that these are products made of mixed materials (glued or sewn) that make recycling a very complicated and expensive process, sometimes impossible, with an impact. devastating on the environment.
Today, more than ever, it is time for a sustainable change: we cannot think and expect to live a healthy future in a world that is not.
This project addresses the environmental problems deriving from the life cycle of this product system, but also the health problems caused by the behavioral choices of users.
Solus tries to find, through design and engineering, a suitable solution without eliminating the source.

SOLUS is the need to create not only a shoe with a new design, but a new concept of LCD, literally Life cycle design. This means that Solus shoes have been designed and engineered taking into consideration the product-system and trying to facilitate all phases of the life cycle (pre-production - production - distribution - use - disposal). The project seeks to focus directly on the product rather than designing and producing specific post-products for managing environmental impacts.
Solus, from the Greek *Suola* and at the same time acronym for *Soluzione sostenibile*, is a project born from the desire to find an eco-friendly alternative to the traditional sneaker, frequently used by amateur sportsmen: not practicing sports at a professional level, people prefer to use the same footwear rather than buying specific ones depending on the activity carried out and the terrain on which one goes to practice (basically for practical and economic reasons).
This choice by the user involves a greater stress on damage over time than other types, with negative consequences for both environmental health and physical health, as well as becoming a greater financial commitment.

Solus - soluzione sostenibile /
2021 /
Render of the assembled shoe.

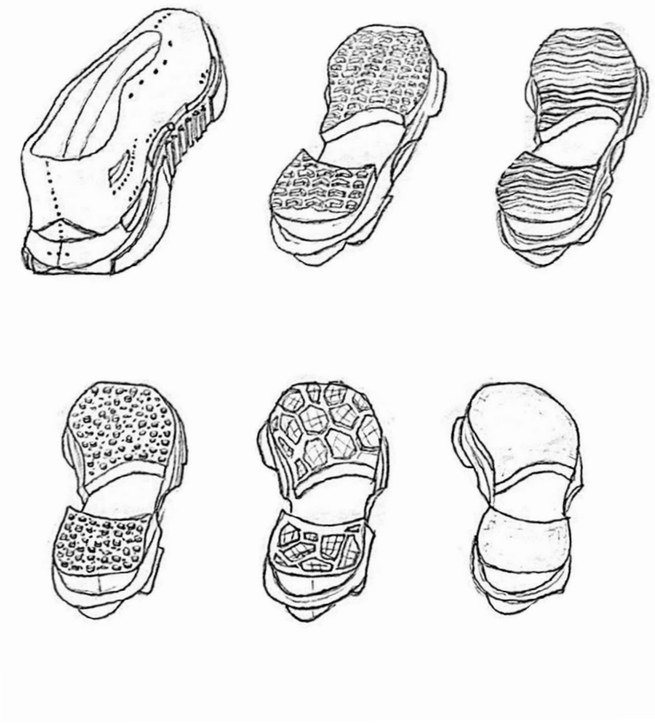
Solus - soluzione sostenibile /
2021 /
Disassembled 3d printed prototype.

Solus allows both to change, once worn, all parts of the shoe in a simple, fast and intuitive way, and to wear a product suitable for any type of terrain, resulting in optimal human and environmental health.
To obtain this result, the components of the shoe are reduced to two (external shell, midsoles) while the type of material is the same (recycled TPU, Shore D40); possibly in case of rain, an additional component could be a sock that acts as an upper in Gore-Tex membrane.
This means a significant decrease in operations and steps for construction, decommissioning and maintenance, less pollution linked to emissions and waste (scraps and production waste), as well as a considerable saving in the use of energy and in use of resources.

When a component is consumed, it can be replaced without having to throw away the entire shoe. From the originality of its design, in line with the principle according to which form follows function, the improvement in the quality of the user experience arises: to assemble Solus the operation is practical, fast and intuitive. To dispose of Solus, the same (only two pieces, same material).

Solus - soluzione sostenibile /
2021 /
assembled 3d printed prototype

Solus - soluzione sostenibile /
2021 /
Design sketches.



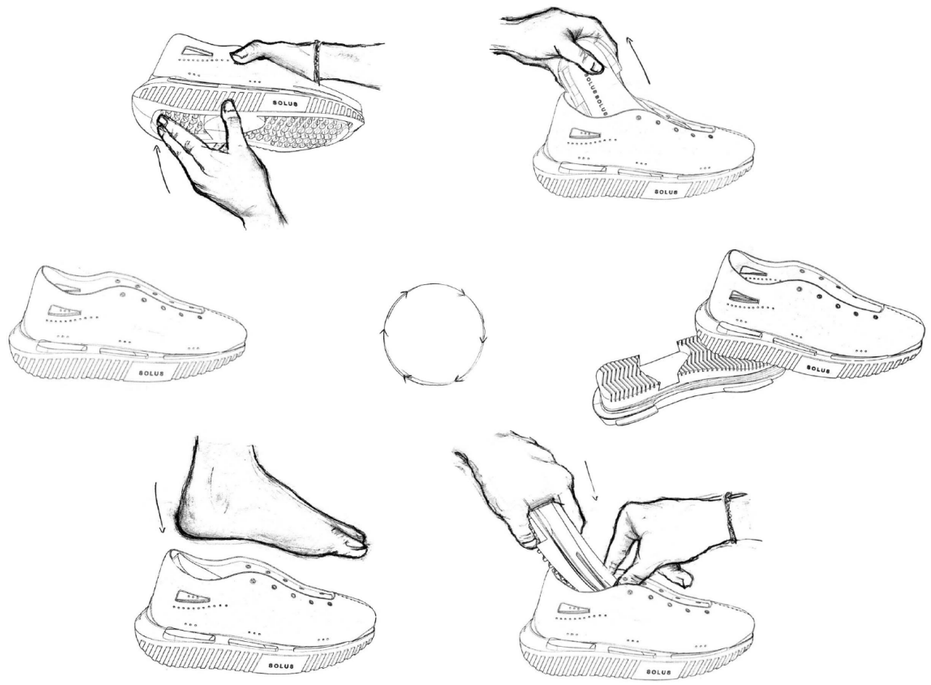
Each interchangeable midsole is designed specifically for specific situations and terrains, rationalizing the time of use and consequently the wear and tear.
The internal compound is designed to be more or less soft and shock-absorbing depending on the activities carried out, as well as the different design of the grooves on the tread: The tread blocks can vary in size, arrangement, number depending on the terrain and activity. breakthrough (Biomechanics). Solus takes this mechanism into consideration to guarantee the user (amateur sportsman) the use of a suitable tread according to the activity and the terrain.

All that allows properties such as grip, adherence, traction and cushioning, improving grip on the ground, stability and therefore a correct postural movement (satisfying the fundamental principles of Biomechanics), making Solus an adequate support for every situation.

Solus - soluzione sostenibile /
2021 /
Render of the assembled shoe.

Most of the solutions of shoes with interchangeable components (if not all) traditionally provide for an external and bottom insertion of the sole (and tread) to the upper, through various types of joints, very often adding material to be able to obtain them and requiring the consumer an excessively high timeline for the creation of the shoe (moreover, unlike the Solus, many of these examples are not provided with adequate support for sporting activity).
The Solus joint, on the other hand, is a step present in an essentially natural way inside the shoe, which uses the internal perimeter of the shell as a stabilizer.
The material added for this step is removed on the bottom of the body, on which there are two large holes to allow the tread to come out.
The joint obtained greatly reduces the shoe composition time, making it clear, effective and practical.

Solus - soluzione sostenibile /
2021 /
Assembly instructions.



Solus - soluzione sostenibile /
2021 /
3d printed midsoles.
Different compounds
and different blocks.

Solus - soluzione sostenibile /
2021 /
3d printed outer shell

The external shell has holes in the upper part that define the shape in an essential and measured way, while in the lower part (the one comprising the joint) of the grooves with lateral bands that give the shoe a sculptural and streamline appearance, focusing the gaze on the origin of the project. The rear part redesigns the wide shell (for greater stability) protecting the heel and tendon, while the use of laces is essential to block the back of the foot: the laces still represent one of the most comfortable, effective and eco-compatible systems today. to ensure the efficiency of the shoe system. The logo is embossed on both components, while the absence of the tongue allows for material savings and guarantees the space required for the insertion of the sole.

As for the choice of colors, the external shell has been designed in a light gray or white, while the midsole can vary in color, but they are always bright colors. In this way, while being internal, it is highlighted and the position of the side flaps, in addition to being functional to the joint, visually lightens the structure.

Solus - soluzione sostenibile /
2021 /
3d printed shoe size 42-43 EUR.

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Material used: recycled TPU Shore D40

Core XY printer with printing area 300x300x340 custom single nozzle

Solus - soluzione sostenibile /
2021 /
External shells all prints.

Solus - soluzione sostenibile /
2021 /
Midsoles all prints.

Solus - soluzione sostenibile /
2021 /
Different views worn shoe.

Solus - soluzione sostenibile /
2021 /
Different views worn shoe.

Solus - soluzione sostenibile /
2021 /
Shoe assembled with the different midsoles.

Thanks for viewing, hope you enjoyed it.

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