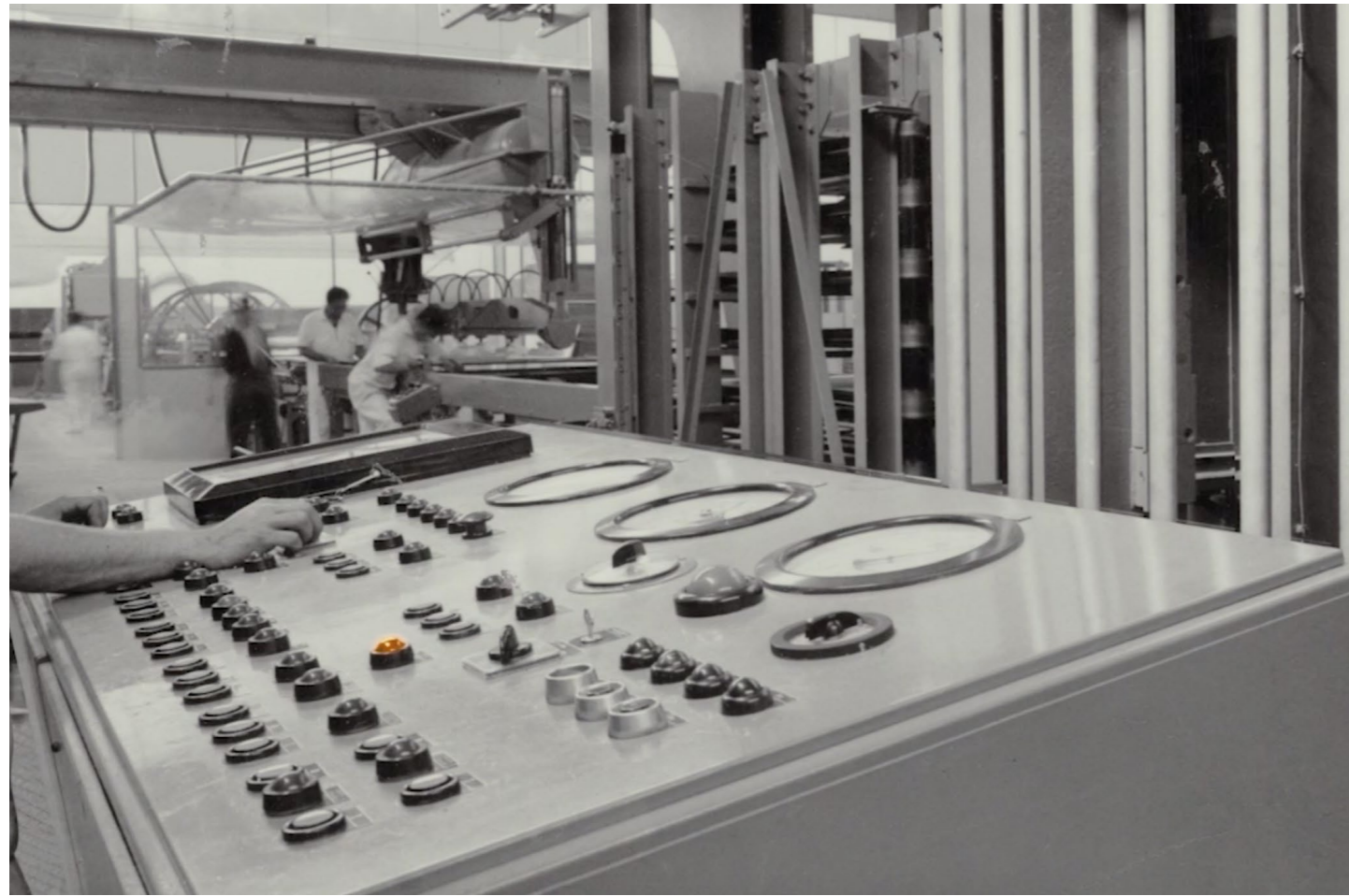# Leading Innovation

## SURFORMA®: Leading Innovation

SURFORMA® is a Sonae Indústria brand, which has been innovating and leading the sector for almost 60 years. SURFORMA® produces laminates and compacts mainly for furniture, construction and interior design industries.

The R&D Department is part of Sonae Indústria's DNA and is responsible for the development of numerous innovative projects, individually or allied to universities, technological centers and other companies.

Besides the self-financed projects, Sonae Indústria also has the financial support of PT2020 and H2020.
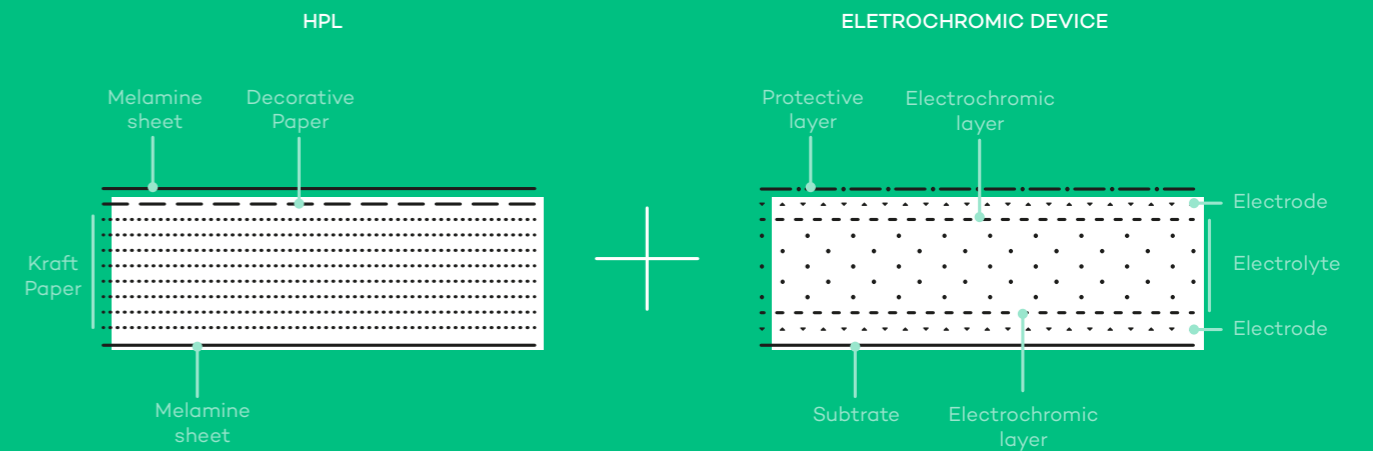
The R&D department has been actively working on two unique projects: **DecoChrom** and **FlexComp**.

# DecoChrom

## Elevating design to the age of interactivity.

The DecoChrom Project was born to provide interactivity to static products, especially oriented to designers and architects for them to use the technology to build visually appealing interfaces in various environments. These printed electrochromics (EC) can be mass produced, are industry compatible and ultra low power interactive products.

The DecoChrom Project brings together a strong, interdisciplinary consortium of 15 partners, including Sonae Indústria. It joins different areas of investigation such as industry and research, design, chemistry, printing, coatings and laminates, electronic systems integration, and complete electrochromics solutions.



HPL

Melamine sheet · Decorative Paper

Kraft Paper

Melamine sheet

ELETROCHROMIC DEVICE

Protective layer · Electrochromic layer

Electrode

Electrolyte

Electrode

Substrate · Electrochromic layer

## Interactivity in HPL is a new topic.

Interactive objects using HPL materials are almost nonexistent. By introducing innovative and interactive surfaces in its portfolio, SURFORMA® is greatly improving the value of its offer in the furniture, interior design and construction markets.

The DecoChrom Project enables SURFORMA®'s customers to interact directly with the brand's products.

Along with this revolutionary technological feature, clients will be able to test different colors, patterns and textures in a matter of seconds, making the moment of choice shorter and easier. This creative innovation makes it possible for designers and architects to play around with drawings, illustrations and endless possibilities for bold and futuristic spaces.
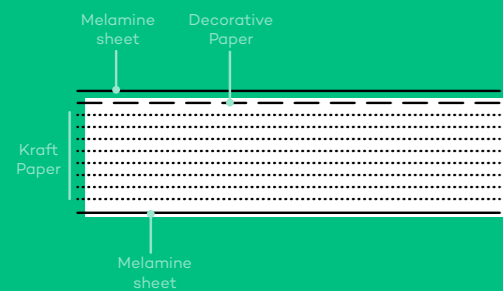
# FlexComp

## Shaping Spaces has never been closer.

The FlexComp is an ongoing, innovative, revolutionary and co-financed PT2020 project developed by SURFORMA®'s R&D Department and TecMinho. The FlexComp product consists of a compact with any thickness which can be thermo-formed in any area and direction by using high temperatures. This product gains a particular interest in industries such as automotive, railways, buses and aircraft.

With the FlexComp products it is now possible to aggregate different properties into the same material, for example: mechanical resistance, postforming capability, flexibility of form, decorative finishing and fire-resistance. Only that way the decorative aspect and the freedom of shape can be combined at the highest level.
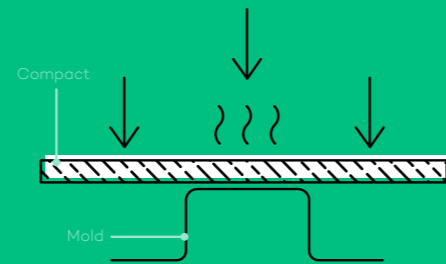
The FlexComp products allow endless possibilities of application and form into the interior design industry, in addition to being reusable, eco-friendly and lightweight.

### 1

Melamine sheet    Decorative Paper
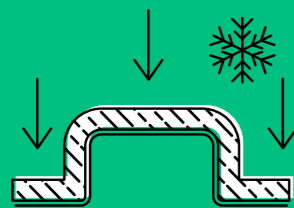
Kraft Paper

Melamine sheet

To produce the **FlexComp Compacts**, thermoplastic resins are used in combination with kraft paper sheets, substituting the traditional impregnation of paper with thermosetting resins. The paper and resin combination is heated and pressed in HPL presses producing planar compacts.
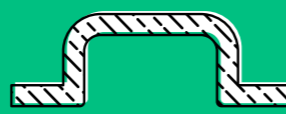
### 2

Compact

Mold

The finished compacts are subjected to a **thermoforming process** applied into the material at a defined temperature and pressure.
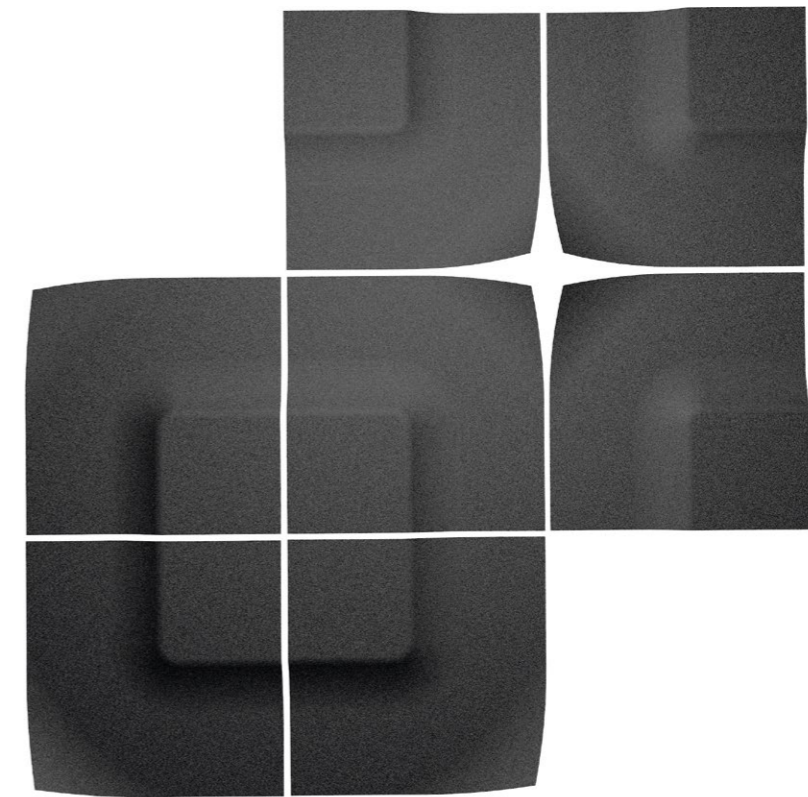
### 3

After being molded, the material is **cooled down** under pressure until room temperature is achieved.

### 4

This process **allows the material to gain other shapes**, matching the customer's requirements in terms of design, and with the advantage of being processed more than once and maintaining its attributes. This means that the product is reusable and recyclable, thus being considered as an eco-friendly product.

ECHO
Inspired by audio effects, this design represents the retention and escape of sound within and between the tile.
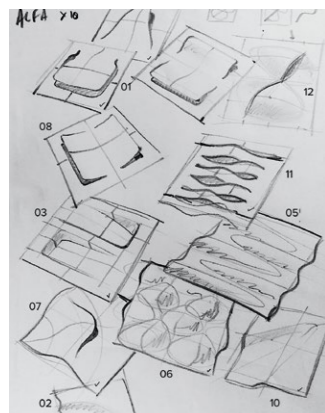
## Conception

In collaboration with ESAD (College of Arts & Design) and UMa (University of Madeira), teachers and students were invited to apply their imagination on the new FlexComp material, conceptualizing creative ideas for future applications in the furniture, lighting, interior design and mobility markets.
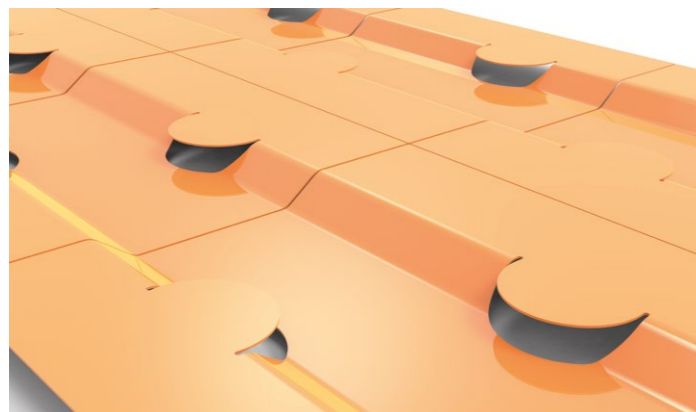
In order to guarantee the best visual results possible, SURFORMA® engaged in a workshop week at ESAD's facilities, where all the support and feedback was given to the students from start to finish.

Several concepts were explored by the students, producing virtual 3D models and renderings of the FlexComp product applications for a further careful selection of the winners.

Their collaboration unfolded into two phases: the creation of decorative and flexible panels for vertical applications like walls and the use of FlexComp products in order to create surfaces for objects and furniture, such as drones, chairs and so forth.
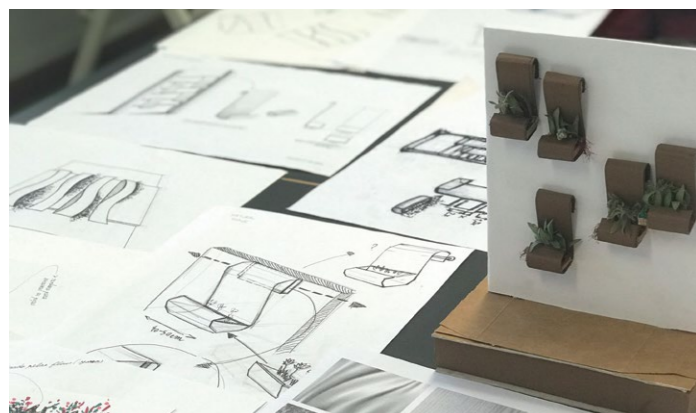
ALPHA Team - Droplet



ECHO Team - Sound



BRAVO Team - Propeller



FOXTROT Team

## Special thanks to:

TecMinho
Fibernamics
Ynvisible
Weproductise

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Jeremy Hugh Aston, Specialist (Coordinator)

UMa - University of Madeira (uma.pt)
Shujoy Chakraborty PhD - (Coordinator)
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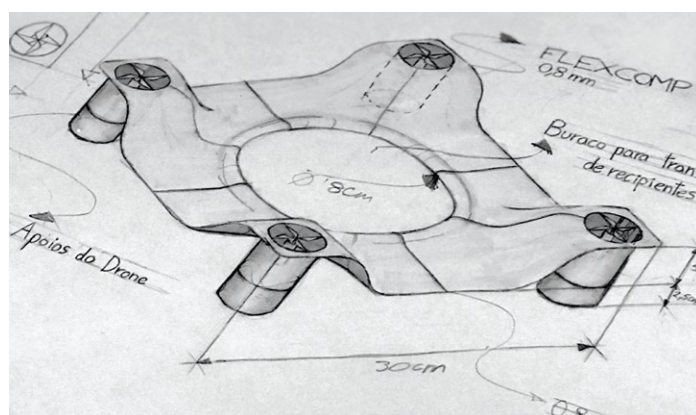(in) /company/surforma

www.surforma.com



DELTA Team - Jigsaw (3D model)
Inspired by puzzle pieces; this design has recessed surfaces, angles and holes in order to create visual strength and curiosity.



CHARLIE Team - Dune (3D model)
Inspired by wind and sand; this design is based on the natural occurrence of moving air over sand.



ALFA Team - Vertical garden
An interesting proposal for balcony and porch areas (homes and offices), supporting garden plants, fruits and vegetable beds in a vertical configuration.
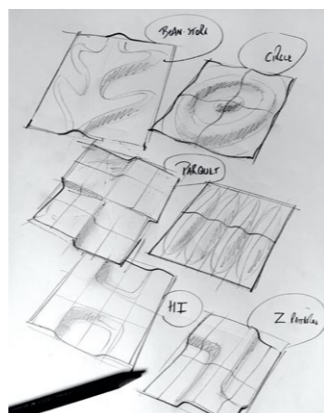


ECHO Team - Acoustic objects
Remoulding and folding the FlexComp material can create echo reduction panels.



BRAVO Team - Drone
Benefiting from the reduced weight, flexibility and customisation qualities, FlexComp could be used to create drone skins.



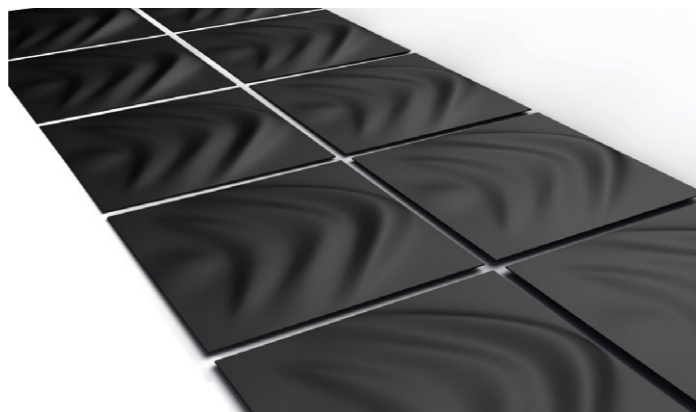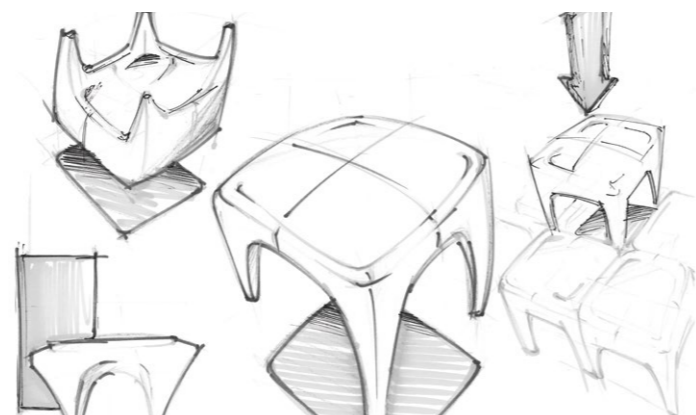CHARLIE Team - Furniture
By shaping the FlexComp material, it is possible to increase the mechanical strength to make shelving and furniture components.

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