



Fragment 1:20

Constrained shrinking

After several attempts on constraining the shrinking deformation of polyester - for instance by layering different types of textile such as polyester/cotton or stitching structural lines on fabric to influence the deformations, I decided to go with steelwire stitched on the textile. The steel works like a bone and gives a structure to the fabric, as it is rigid enough to constrain the textile, but not too strong to let the armature bend.



Hybrid Cross



Hybrid polyester-cotton



Closed loop



Regular pattern



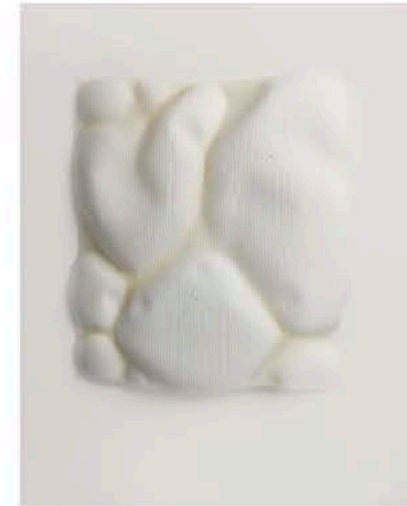
Accordion



Double skin accordion



Irregular heating



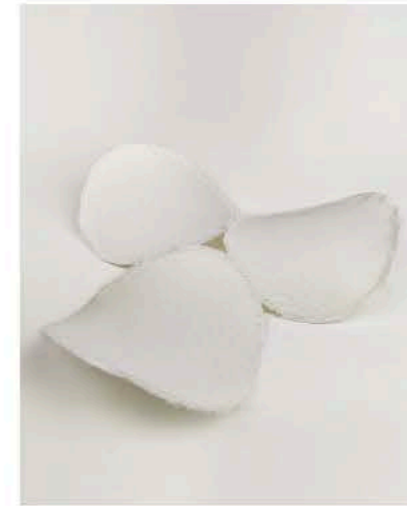
Irregular heating



Grid



Double loop



Round shapes



Twisted



Irregular accordion



Irregular double skin



Irregular pattern

Heating

All the pieces are heated individually in an oven, thus have a limit in term of maximum size (about 4 by 4 meters for industrial ovens). The benefit of the oven is that it offers a uniform heating, which is necessary to have a control on the shrinking deformation, and to avoid melting the fabric. The polyester shrinks by 15-30%, depending on the type of textile (weight and type of weaves).



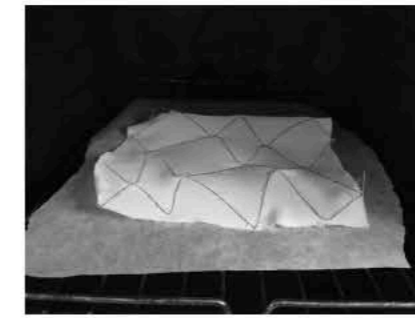
Industrial oven



1



2



3



4



- 1 Double skin accordion
- 2 Irregular accordion
- 3 Round shapes
- 4 Single element



Model 1:20

Constrained shrinking

The project focuses on shrinking polyester and constraining its deformation, as a way of shaping and giving a form to textile. Shrinking polyester is usually avoided as it is perceived as something accidental and unwanted. By rethinking this statement, the project aims to explore the possibilities given by the deformation of polyester, and to use it as a tool to produce an architectural spatial condition.

Synthetic textile, such as polyester, is a very strong and durable fabric, which does not shrink in normal conditions. However, under high temperature - between 200 °C to 220 °C - polyester fibers start to deform and shrink, which is the result of the pre-tensioning of synthetic fibers during the manufacturing process.

Inspired by the theory of “living on the slope”, elaborated by Claude Parent, the project aims to create a sitting landscape. The entire space is built out of small units, individually heated in the oven and bound together on-site, and consists of three-dimensionnal surfaces, forming a walkable floor and a roof connected together by vertical elements, wall and columns. The floor and the wall elements are made out of a very strong and heavy polyester, whereas the roof, and the columns, are made using a very light and almost transparent textile, which allows the light to pass through. The nature of this space reflects a fragile state given by the lightness and softness of the textile, but at the same time expresses strength, due to the tension forces of the constrained textile.