

Complex surfaces

Initial setting



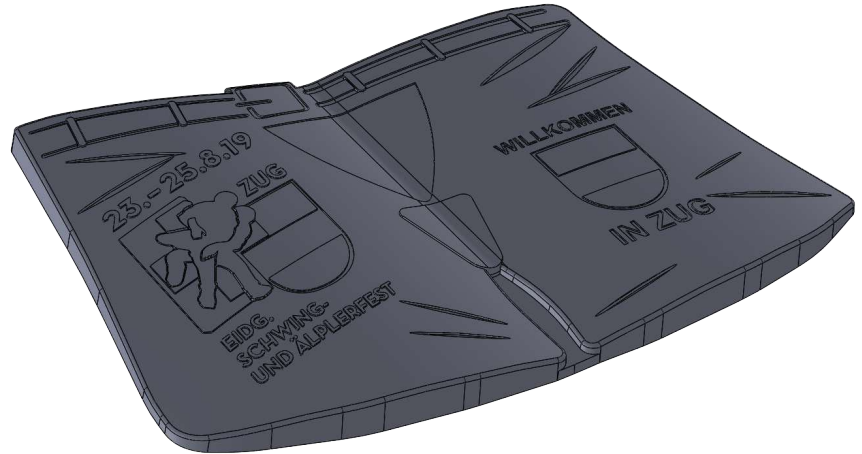
The official logo was used as template.

The goal was to produce a thematic chocolate for the Swiss Wrestling Championships. Jato designed these and manufactured the mold for the chocolate producer. The desired shape of the chocolate required tremendous creativity from the Jato team.

Challenge

Two sizes of the same chocolate were planned - weighing 250 and 500 grams. Only the 250 gram size was finally produced. The Zug coat of arms and the festival logo were embossed on the face of the flat chocolate bar.

Jato designed the chocolate based on a photograph of the original wooden sculpture. This was challenging because the logo was not vectorized and everything had to stay on



CAD-model of the finished pants.

the same level on the chocolate surface. Jato worked with a graphics program and then moved the draft to CAD.

In addition to the logo - two swiss wrestlers in wood - the shape of the chocolate was difficult: In order to make the most authentic wrestling pants, Jato worked with different curved surfaces. The logo and the bar geometry were designed to ensure the finished chocolate bar could

be easily removed from the mold. The bar thickness could not exceed 12 mm, so that eating remained enjoyable.

The design on the chocolate offered a lot of light and many shadows. This could for example be solved with a two-tone chocolate but the „make-up“ applied by hand would be not suitable due to the large production quantity.



Completed Metapor-plate for the deep drawing.



Testform with 25 % of the size for the check of the details.

Proceeding

If the basic form would have been carved by hand, adjustments would have required a lot of time and exact calculations would have been difficult. That's why Jato-Düsenbau AG

first adapted the logo with the graphics program. Using the 3D data, design parameters such as volume and weight could easily be modified to the size. Different 3D prints were produced to check the suitability of the template.



Done: The wrapped wrestling-chocolate.

The Stereolithography (SLA) process was used due to its high precision. For example, the pants were printed in a very small size to ensure fine details were still recognizable. The final model, on which details were visible good enough, was edited in a CAM program so the relief could be milled in a special aluminum plate (Metapor).

These special plates are permeable to air and thus excellent for vacuum thermoforming. This eliminates the need for vacuum. The mold was then produced by deep drawing the plastic film. In this mold the liquid chocolate is poured in.

Info

Used machines

Craftbot XL
 3D Systems MJP2500+
 EOS M290
 Retro ProtoTrak 1000

Software

Solidworks 2017
 Adobe Illustrator
 Autodesk Fusion 360

Contact

Jato-Düsenbau AG
 Täschmattstrasse 23
 6015 Lucerne
www.jato.ch



Jato-Düsenbau AG