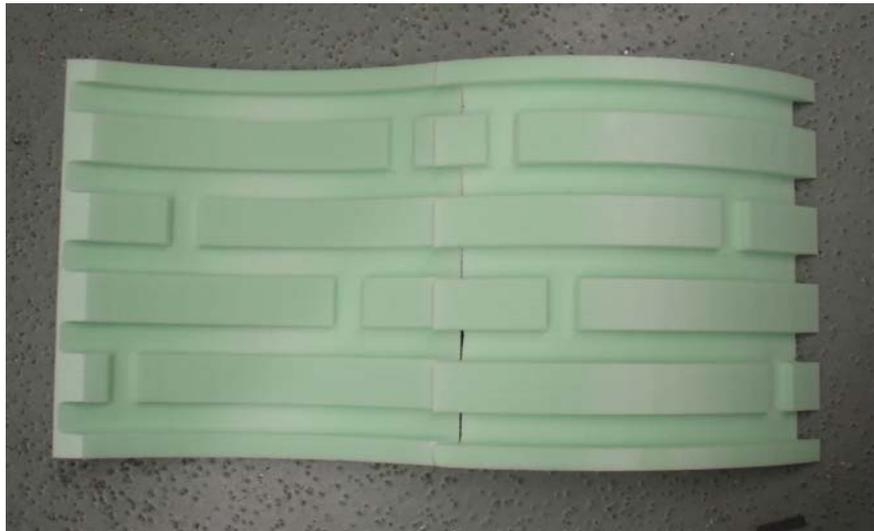


Technology of the Groove

The module

The four modules will be milled by a milling machine at PMB. The modules measure 30x30cm in length and are 5cm thick.

The image at the right shows an example of a previous milled model.



Technology of the module

As the module will be from foam, supplementing materials should be added.

On the bottom in between two rails a steel stripe will be mounted, for a magnetic connection with the blocks.

Inside the rails pieces of cell rubber with a top layer of aluminum tape will be mounted. Every piece is connected with either the positive, or the negative pole of the power supply. The blocks that will be positioned between the rails will connect with the aluminum tape and thereby complete the electronic circuit, lighting a LED.

The image below represents how the technology will be added into the module.



Visible part of the blocks

The top part of the blocks is made with vacuum formed plastic, which we sand coated afterwards.

The image at the right shows one of these blocks.



Technological part of the blocks

The technological part of the blocks is described as follows:

- A part consists of two massive tubes, the top one being smaller compared to the bottom one.
- The top one has two holes, through and through. These contain only two DUO-LEDS and resistances. A duo led is a led which contains two colors, depending on the direction of the current flow it lights up one of them. The legs of the two LEDs are moved in 4 directions; 90 degrees from each other.
- The bottom tube has one hole, only a few mm deep. It contains a magnet at the bottom, attracting the metal plate between the rails in the module. Furthermore has this part notches around, and on top, for the legs of the LED.
- When the two parts are glued together, aluminum tape is positioned around the legs of the LED to create a bigger surface for electronic connection with the aluminum tape on the inside of the module, between the rails. Then these legs are bend over the edge of the bottom tube and the tape is secured.



The image at the right shows the final prototyped techno part of the blocks.

Summary of Groove technology in prototype

The Groove exists of four modules milled in foam. When the blocks are positioned in the module, between the rails, they are drawn to the metal at the bottom and secured between aluminum stripes at the insides of the rails. Against the insides of the rails are pieces of cell rubber between the rail and the aluminum stripe for the electronic connection with the LED block. This makes sure the blocks always makes contact with the metal outside, due to the spring resistance of the cell-rubber. Therefore one of the LEDs lights up in one color, and the sand coated plastic cover-block diffuses the light. When rotating the block, another color appears due to combining two duo LEDs in one block.