

DESIGN PRODUCE & MARKET PRODUCTS FROM LOCALLY RECYCLED PLASTIC

- Tim van Berloo -

Uniplastic is a small collaboration between a healthcare organisation focused on people with mental disorders (Zideris) and students (Enactus) and Wageningen school. Together they collect local thermoplastic waste, mainly PP and HDPE. This plastic waste is shredded and sorted so it can be remelted to form new products.

Plastic is a very useful material used in countless applications, yet as a material it is still seen as a single use product more than a resource. Plastics such as PP are easily recyclable and repurposed to almost any shape and function. After multiple cycles of remelting the plastic it loses viscosity during the molding process yet the final structural properties remain almost identical.

To get acquainted with the material and its workability, some hands on experimentations were done. This was done to get familiar with the limits and capabilities of the material and the production process. The machines at Uniplastic include a shredder and extruder. Furthermore, I introduced a new tool to make small plastic sheets.

During my research I defined a target group, competition, constructed multiple moodboards and analysed a survey done by Uniplastic about recycled products. During all the research and experimentations, multiple ideas were captured. After discussions, the most feasible and promising ideas were developed into concepts. This resulted into various concepts, each with their own demands, wishes and SWOT analysis.

These prototypes included a bench, stool and lamp made from the recycled beams, bars and sheets. The lamp created from plastic waste showed the most potential and was further developed for manufacturing. After this production process was determined a cost analysis was made for the parts used in the lamp.

Furthermore, a marketing plan was constructed to guide Uniplastic in the possible ways to sell this product. Some rebranding was done to produce fitting tags for the lamp. To bring the product on the market an CE certification and manual were put together and the product is now for sale at a local store.

The Lamp is completely assembled by workers at Uniplastic. The panels are made from recycled PP, the combination of transparent and colored plastic flakes creates unique and colorful patterns. The lamp functions great as a night light next to bed or on a desk. The different colors create different moods. The clients at Uniplastic can mix and these themselves and experiment with different



colors and patterns. The plates and E27 lamp are interchangeable.

When corona measurements were further lifted, clients of Zideris went to work and started producing the lamps. This showed some difficulties regarding the assembly of the frame. To improve this process I redeveloped the frame using laser cut parts. This made the assembly process of both the frame and plastic sheets much easier yet slightly more costly. However the clients are now able to fully independently produce the lamps.

The inspiration for this redesigned lamp was taken from traditional Japanese Lanterns. Hopefully my contribution will inspire more people to recycle plastic

and see it as a valuable resource instead of trash.

